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DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA

I

THE ECONOMIC ANNALIST

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DEPARTMENT OF AGRICULTURE, OTTAWA

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THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

M. E. ANDAL, Acting Director

FEBRUARY 1964 Vol. XXXIV No. 1

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G. P. BOUCHER, Editor

Published by Authority of the Honourable Harry W. Hays
Minister of Agriculture

INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935–39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	235.6	185.1	286.0	264.0	290.8	235.1	130.7	126.2	186.1
1963	244.6	222.5	169.7	275.4	248.2	296.4	237.6	133.0	130.3	....
1962										
Jan.	237.0	233.3	195.6	271.0	266.8	283.4	233.6	129.7	124.8	179.1
Feb.	237.1	233.6	196.4	270.8	265.8	....	....	129.8	125.0	181.4
Mar.	237.0	231.7	196.0	267.5	265.7	....	....	129.7	124.4	183.9
April	237.4	233.7	195.4	272.0	266.2	293.1	235.8	130.3	125.8	184.0
May	239.3	237.1	197.7	276.5	267.9	....	....	130.1	124.5	186.1
June	240.3	243.3	200.7	285.8	272.8	....	....	130.5	125.6	186.3
July	241.3	249.6	203.7	295.6	277.8	....	....	131.0	127.0	186.7
August	242.6	238.0	171.6	304.3	262.9	295.8	236.0	131.4	128.4	188.7
Sept.	241.9	231.8	165.8	297.8	257.9	....	....	131.0	126.8	188.8
Oct.	241.7	232.1	165.9	298.2	255.8	....	....	131.5	127.2	189.1
Nov.	242.2	232.7	165.1	300.3	254.5	....	....	131.9	127.7	189.6
Dec.	242.2	230.0	167.2	292.8	253.6	....	....	131.9	127.8	189.7
1963										
Jan.	242.9	227.0	170.7	283.3	250.8	290.8	237.6	132.0	129.0	189.4
Feb.	242.7	224.1	174.3	273.8	249.5	....	....	132.1	129.4	191.1
Mar.	242.4	222.1	175.4	268.8	246.9	....	....	132.1	128.9	194.0
April	242.8	219.0	171.4	266.6	243.1	298.8	238.3	132.3	128.9	194.3
May	244.4	221.9	171.9	271.9	244.3	....	....	132.3	128.3	195.7
June	245.8	227.5	174.9	280.1	249.8	....	....	132.8	129.7	195.9
July	246.2	229.7	173.4	286.1	252.9	....	....	133.5	132.5	192.8
August	244.7	227.6	169.6	285.6	251.9	299.7	237.0	133.9	133.2	195.1
Sept.	245.2	224.5	163.9	285.0	251.7	....	....	133.4	131.3	197.7
Oct.	245.9	216.7	163.3	270.1	247.4	....	....	133.6	130.4	200.3
Nov.	247.0	216.5	163.1	269.8	245.3	....	....	134.0	130.8	204.2
Dec.	245.7	213.9	164.7	263.1	244.7	....	....	134.2	131.4	....
1964										
Jan.	246.9	215.8	167.3	264.2	242.9	....	....	134.2	131.4	....

Note:—See earlier editions for index numbers previous to 1926.
Source:—Dominion Bureau of Statistics, Ottawa.
(a) Exclusive of living component. 1963 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

Canada's Economy in 1963 and Outlook for 1964.—In his annual review of the Canadian economic situation, published at the end of 1963, the Minister of Trade and Commerce stressed that the past year had been a year of steady economic advance.

Canada's gross national product rose by about six per cent between 1962 and 1963 and total output, in real terms, by more than four per cent. A record grain crop contributed greatly to this advance but nonfarm output also rose by about four per cent. Total personal income increased by six per cent and per capital real income advanced to a new high.

A strong international demand led to a sharp rise in exports, larger business outlays for plant and equipment and an unusually strong market for consumer durable goods. Industrial growth was spearheaded by a strong advance in secondary manufacturing. The agricultural implement industry, and other machinery sectors, had a notable resurgence. Total industrial production rose by five per cent between 1962 and 1963 and the cumulative advance for the last three years was 16 per cent.

The generally improved competitive situation of Canada's products was also reflected in Canada's trade and balance of payments position. Exports increased a great deal more than imports and there was an upward shift of $275 million in the merchandise trade balance in the first 10 months of 1963 and unusually heavy grain shipments pointed to further substantial gains in ensuing months.

The chances of continued increases in the surplus on merchandise trade look good. The strong export trend has been strengthened by large sales of wheat to Mainland China, the U.S.S.R. and other Eastern European countries. Wheat exports in the current crop year are expected to reach 550 million bushels; they would then exceed the previous annual record by about 150 million bushels.

Expansionary forces are also evident within the domestic economy. The grain output may be lower in 1964 than in 1963 but the additional spending power generated in 1963 by record production and exports will act as a stimulus to the over-all economy for some time.

Preliminary indications of capital spending plans for 1964 suggest a maintenance of the 1963 rate of advance in business outlays on plant and equipment. The continuing growth of incomes should maintain the general strength of the consumer market.

Canada's current account deficit moved down from a high level of $1.5 billion in 1959 to scarcely more than one-third of this amount in the 12 months ending September 1963. The promising outlook for exports in 1964 is likely to bring us within sight of a balance in our external accounts for the first time in a decade.

External Trade.—Canada's trade with all countries, in 1963, reached a record total of $13,547 million. The previous peak had been recorded in 1962 when external trade totaled $12,605 million. Both exports and imports were at new top levels. Total exports rose to $6,980 million in 1963 from $6,347.7 million in 1962, and total imports to $6,567.4 million from $6,257.8 million. A merchandise trade surplus was recorded for the third year in succession and, at $412.6 million in 1963, it was the largest surplus since 1952.

An upward export trend prevailed throughout 1963. Values fluctuated from month to month but each monthly total exceeded the corresponding total a year before. Monthly imports were also higher than in 1962, except in February, March, and May. Both exports and imports rose strongly in the latter part of 1963. Over the year the increase in exports was chiefly attributable to the accrued volume of shipments whereas the increase in imports was mainly due to higher prices. Average export prices rose by only about one per cent whereas the net value of goods shipped rose by about nine per cent. Average import prices rose by about four per cent whereas the index of physical volume rose by about one per cent.

Larger wheat, lumber, and iron ore shipments highlighted the 1963 export picture. The proportion of exports going to the United States declined slightly and shipments to the United Kingdom and to other Commonwealth and preferential countries were proportionately the same, but there was an increase in the share of goods sent to other foreign destinations. Canada's external trade statistical record in December 1962 and 1963, in the October-December periods of 1962 and 1963, and for the years 1962 and 1963 may be summarized as follows:

	December		October-December		January-December	
	1962	1963	1962	1963	1962	1963
			—millions of dollars—			
Exports						
United Kingdom	79.2	75.5	252.3	264.8	919.9	1,014.9
Other Commonwealth and preferential countries	29.1	37.7	101.2	104.5	335.6	399.1
United States	279.0	326.1	977.8	1,019.0	3,744.7	3,913.2
Others	118.8	214.1	395.0	591.4	1,347.5	1,652.8
Total	506.1	653.5	1,726.3	1,979.7	6,347.7	6,980.0
Imports						
United Kingdom	34.9	47.8	131.1	145.3	563.1	527.5
Other Commonwealth and preferential countries	21.0	35.9	88.4	128.0	318.5	405.8
United States	296.9	372.2	1,042.8	1,189.4	4,299.5	4,457.0
Others	84.6	107.2	299.2	340.6	1,076.7	1,177.1
Total	437.4	563.1	1,561.5	1,803.3	6,257.4	6,567.4

Wholesale Trade.—Sales, by Canada's wholesalers, rose to about $846.9 million in November 1963 from $812.0 million in November 1962. Sales in the January-November period rose to $9,446.8 million in 1963 from $8,990.6 million in 1962.

Consumer Prices.—Canada's consumer price index (1949=100) rose to 134.2 in December 1963 and January 1964 from 132.0 in January 1963.

The food index was 131.4 in December 1963 and January 1964. Higher prices were recorded for powdered skim milk, cheese, bread, cake, doughnuts, cake mix, coffee, margarine, bananas, apples, orange juice, most fresh and canned vegetables, chicken, and a few cuts of meat. Lower prices were reported for evaporated milk, sugar, eggs, oranges, tomatoes, turkey and most cuts of meat.

Farm Prices.—Canada's index of farm prices of agricultural products (1935-39=100) dropped to 244.6 in December from 245.3 in November 1963. This latest decline continued the downward trend that started in July. Between November and December lower prices were recorded for livestock and eggs and higher prices for potatoes.

Farm Implements and Equipment.—Sales of farm implements and equipment, at wholesale, rose to $329.6 million in 1963 from $282.7 million in 1962. Sales of repair parts (included in total sales) rose to $49.8 million from $43.9 million.

Cattle, Sheep, and Horse Numbers.—Cattle and calf numbers, on Canadian farms, rose to about 11,552,000 at December 1, 1963 from 11,206,000 a year earlier. Sheep and lambs on farms numbered about 860,000 head, compared with 885,000 at December 1, 1962. The number of horses declined to 436,800 head from 457,800.

Dairy Products.—Production of cheddar cheese, ice cream mix, and evaporated whole milk was larger in December 1963 than in December 1962 and in the year 1963 than in the year 1962 but the output of creamery butter and of skim milk powder was higher in December 1963 but lower in the year 1963 than in 1962. Production, in thousands, in 1963, and in 1962 in parentheses, and also in thousands, was as follows: creamery butter, 349,686 pounds (361,498); cheddar cheese, 135,906 (116,558); ice cream mix, 23,228 gallons, (21,789); evaporated whole milk, 304,143 pounds (287,395); and skim milk powder 176,864 (192,389).

Production of process cheese from cheddar and other hard or cream cheese base rose to 6,966,455 pounds in December 1963 from 5,952,709 in December 1962. The total output for the year rose to 71,703,721 pounds in 1963 from 64,664,125 pounds in 1962. Stocks held by manufacturers increased to 4,653,233 at December 31, 1963 from 2,970,309 pounds a year earlier.

Sales of fluid milk and cream, in milk equivalent, totaled 519.2 million pounds in November 1963 and 5,564.9 million pounds in January-November 1963.

Stocks of dairy and poultry products, at January 1, 1964, in thousands, and with figures for January 1, 1963 in parentheses, were as follows: creamery butter, 137,004 pounds (135,450); cheddar cheese, 57,961 pounds (51,458); evaporated whole milk, 39,878 (39,374); skim milk powder, 20,787 pounds (53,513); and poultry meat, 36,693 pounds (38,909).

Hogs.—The number of hogs on farms, in Canada, at December 1, 1963 was estimated at 5,348,000 head, which represents an increase of seven per cent over the corresponding figure 4,993,000 for a year earlier. All provinces except New Brunswick recorded increases; the gains amounted to four per cent in the eastern and 13 per cent in the western provinces. The fall pig crop of 4,128,000 exceeded by 7.5 per cent the fall pig crop of 3,841,000 a year earlier. About 567,400 sows are expected to farrow in the spring of 1964, according to farmers' intentions reported in the December 1963 survey of the Dominion Bureau of Statistics.

Eggs.—Egg production dropped to 36.6 million dozen in December 1963 from 38.0 million dozen in December 1962. The average number of layers dropped to 26.4 million from 27.6 million, and the rate of lay per 100 layers edged up to 1,672 from 1,667. The egg output dropped to 418.3 million dozen for the year 1963 from 434.2 million dozen in 1962.

Wheat.—Total exports of wheat and wheat flour from the four major traditional exporters—Canada, the United States, Argentina and Australia—reached a record level of 552.7 million bushels during the August-November period of the current crop year. This total represents an increase of 15 per cent over the previous record volume exported in the corresponding four months of 1961 and exceeds by 80 per cent the 10-year average of 306.8 million bushels for the same period. Wheat exports from each of the four countries were higher for each of the four countries. Canada, however, recorded the largest increase—about 87.3 million bushels August-November exports, in million bushels and with figures for 1962 in parentheses, were as follows: Canada, 207.6 (120.3); the United States, 254.0 (175.7); Argentina, 16.7 (13.7); and Australia, 74.4 (32.0).

Supplies of wheat remaining in the United States and Canada for export and for carryover at the end of their respective crop years, plus the year-end (November 30) carryover stocks in both Argentina and Australia, in million bushels and with figures for the previous year in parentheses, were as follows: United States, 1,419.1 (1,600.8); Canada, 859.6 (699.8); Argentina, 01. (8.9); and Australia, 23.1 (18.2). Estimates for both years include on-farm stocks as well as stocks in commercial positions.

In an address to the Alberta Wheat Pool in Calgary, Alberta, on December 2, 1963 the Minister of Trade and Commerce had the following comments to make about wheat agreements:

> "About midsummer the outlook began to improve. The first major break came with the signing of another agreement between the Canadian Wheat Board and the China Resources Company similar to the first contract signed in 1961 by the two agencies.
>
> Under the terms of this long term agreement, individual sales contracts are to be negotiated periodically as to quantity, price and shipping period.
>
> The long term agreements with China were followed in September by an initial sale of 11 million bushels to Russia followed by the renewal of the Canada-U.S.S.R. Trade Agreement and the largest single wheat sale in Canadian history. During the three years of this agreement which dates from the expiry of the previous agreement on April 17, 1963, the U.S.S.R. has agreed to purchase 247 million bushels of wheat or flour equivalent. The bulk of this quantity, 228 million bushels, is for shipment in the current crop year but the Soviet Union has agreed to purchase 19 million bushels of wheat, or the flour equivalent, in the third year of the agreement.
>
> On October 8th, Bulgaria signed a three year agreement to purchase 3.7 million bushels annually with the option of a further 5.5 million bushels in the current crop year if this quantity can be made available. This is the first sale of wheat to Bulgaria by Canada and I am confident that the three year agreement will provide the basis for a continuing market in that country.
>
> Czechoslovakia, which has been a sporadic market in the past, clearly indicated its intention of becoming a regular customer for Canadian wheat by signing, on October 29th, a five year agreement for the purchase of 44 million bushels.
>
> On November 5th, Poland, which has been a regular customer for our wheat since 1955-56, signed an agreement providing for the supply and purchase of 44 million bushels of wheat during the next three years. Under this agreement annual shipments will average 14.7 million bushels and will, in the three year period, exceed the combined total of the best three years to date.
>
> Thus, in the last four months, in addition to the agreement with China and the spectacular agreement with the Soviet Union, long term agreements have been concluded which have developed a new customer for Canadian wheat—Bulgaria—converted a sporadic customer to a regular customer—Czechoslovakia—and increased the annual level of exports to a regular market—Poland.
>
> The significance of these long term contracts with China, the Soviet Union, Bulgaria, Czechoslovakia and Poland is that they seem to indicate a fundamental shift in the pattern of world wheat trade. Mainland China shows every sign of becoming a permanent importer of wheat and on a substantial scale. The same may be said of the Socialist countries of Eastern Europe which as a group were once self-sufficient in wheat and which more recently were large importers of wheat from the Soviet Union.

FARM SURVEY DATA RELATIONSHIPS WITH MANAGERIAL ABILITY (continued)

R. S. RUST

In the April issue of The Economic Annalist, data pertaining to the size and use made of farm land, farm operating expenditures and living costs and the farmers' views on and use made of numerous sources of information were related to various levels of managerial ability[1]. The present article deals with other information obtained from the same farm survey and attempts to show how actions and procedures carried out by farmers may be indicators of farm managerial ability levels.

Farm Records.—It is extremely difficult in the fast-moving business world of today to visualize an efficient firm that does not keep fairly detailed records of its business. In farming, many operators depend on their memory or on records which have been kept in such a way that their contribution toward business management efficiency is slight. In recent years, the leadership given by various agricultural extension services, as well as by other private groups has greatly encouraged and assisted in the keeping of more adequate farm records. Despite this progress, such improvement programs have as yet only influenced a relatively small number of farmers. To many farmers, a farm record still means nothing more than the keeping of bills and receipts for the sole purpose of completing income tax returns. In other cases, a partial record is entered into a so-called record book but no attempt is made to analyze the data or use them in management decisions. On the other hand, there are many farmers who have developed their own system of record keeping without outside guidance, and use their records extensively before making management decisions.

It was assumed in the study that the keeping of useful farm records, the type of record kept, the amount of additional information recorded, and whether the record was kept by the farm operator, his wife or jointly by both of them depended largely on the operator's level of managerial ability. To test this, instead of examining each farm record, six types of records were described. Each farmer who stated that a farm record was kept was then asked to choose the type that best described his farm record. Type A, which involved the mere keeping of bills and receipts, was not considered in the later analysis to be of sufficient use to management to warrant inclusion as a recognized (or useful) record type. Type B record contained information on total farm expenditures and income. Although this type was considered to have some uses, it was considered inadequate for efficient management. The type C record included a breakdown of farm income and expenditures by categories while type D included, in addition, total household expenditures. Type E, included a breakdown of household expenditures while type F included a farm net worth statement[2]. Other information on the content of records was also obtained. While the description of record types did not adequately fit many of the records, a combination of two types frequently did since the type of record kept of a specific enterprise often depended on the relative importance of that enterprise to the farm business.

The responses given by farmers in the various management groups indicated that a relationship between managerial ability levels and the content of farm records did exist. (Table 9).

---

[1] Rust, R. S. Farm Survey Data Relationships With Managerial Ability. The Economic Annalist, Vol. XXXIII, No. 2, April 1963, pp. 29-38.

[2] No E or F were reported.

While the educational attainments of the farm operator and his wife may in some cases partly determine who keeps the farm records, there appears to be a relationship between the managerial ability level of the operator and whether it is the farmer or his wife that keeps the records. A similar relationship between managerial ability and quality of record appears to exist. In the upper one-quarter management group, 85.7 per cent of the farm operators stated that they were personally responsible for the records that were kept compared with 50 per cent of the operators making a similar statement in the lower one-quarter group. When the most useful types of records (C and D types) were considered, 91.7 per cent were kept by operators in the highest management group and 8.3 per cent by their wives compared with 66.7 per cent kept by operators in the lowest management group and 33.3 per cent kept by their wives. Joint responsibility for the best types of farm records occurred most frequently between the two extremes. (Table 10).

Table 9.—Types and Content of Farm Records

	Management groups						
Record type and extra content[a] in records	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
	—per cent per group—						
Recognized record types[b]	93.3	95.0	87.1	80.0	75.0	66.7	83.6
Type B[c]	14.3	15.8**	18.5	37.5	46.7	40.0	27.5
Type C[d]	85.7	78.9	74.1	58.3	53.3	60.0	66.7
Type D	0.0	5.3	7.4	4.2	0.0	0.0	5.9
Records includes breeding dates	80.0	80.0	83.9	76.7	75.0	80.0	80.3
Quantities of products produced	46.7*	40.0	38.7	13.3	5.0	6.7	26.3
Prices received or paid per unit	33.3	20.0	25.8	10.0	5.0	6.7	18.0
Comments on seeding dates, weather or market prices	26.7**	20.0	16.1	3.2	5.0	0.0	9.8
Contains more than one of above	46.7**	42.5**	41.1**	25.8	22.5	23.3	33.6

[a] Extra content in records regardless of record type.

[b] Total B, C and D types kept.

[c] Expressed as a per cent of the total B, C and D types.

[d] The sub-dividing of relatively small groups by type of record kept decreased the probability of statistical tests being significant.

*Significant at the .01 level or greater. Here the test was to discover whether there was a significant difference between the 46.7 in the upper one-quarter group with the 6.7 in the lower one-quarter group.

**Significant at the .05 level or greater. In the first case shown, the difference tested was between the 15.8 in the upper one-third group and the 46.7 in the lower one-third group.

How Farm Planning Is Carried Out.—When extensive farm records are kept and are seriously analyzed by either the farmer or by management specialists, the extent of planning for future production is likely to be fairly extensive and well thought out. But, when no records are kept or when they are inadequate, when market requirements are not analyzed, when the potential production and ultimate probable profit from various enterprises are not compared, farm planning is likely to be based primarily on the memory of the operator and on present prevailing market prices. We thus have two extreme situations: one where many calculations are recorded on paper and the other where nothing is recorded. Consequently, one may anticipate a relationship between formal analysis with pencil and paper calculations and probable returns from proposed programs, and the better planning of the best managers. While exceptions are likely to occur where the best managers are able to make better appraisals without pencil and paper calculations than the less skilled managers using formal procedures, the fact that more of the best farm managers keep farm records and also that these records are on the whole of better quality than those kept by farmers having less ability indicates that questions concerning the use of "pencil and paper" in farm planning may reveal considerable information about the managerial ability of individuals. To test this, the following questions were asked. In planning future production, do you (a) usually just figure things out in your mind without putting them down on paper, or (b) usually just figure out and write down possible income, or (c) usually figure out and write down possible gross income, possible expenditures and possible profits, or (d) usually just produce what seems best but curtail expenditures as much as possible and hope to get a reasonable profit? Farmers were told that (a) and (d) did not involve doing pen or pencil work, that (b) required some pen or pencil calculations and that (c) usually required quite a bit of calculating and bookwork. Since the amount of planning needed in each farm enterprise may vary greatly, farmers were also told that they could signify that they did (D) type planning with any combination of (A), (B), or (C) types. The answers to these questions indicated that the better managers were considerably more likely to use "pencil and paper" in their planning methods than the poorer ones. Nevertheless only 53 per cent of the best managers used the formal approach in planning. (Table 11).

Table 10.—Relationship of Farm Record Quality to Person Responsible[a]

Person or persons responsible for keeping farm records	Management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
	—per cent per group—						
Farm operator[b]	85.7	78.9	59.3	37.5	53.3	50.0	49.0
Farm housewife[b]	7.1	5.3	18.5	45.8	33.3	50.0	31.3
Operator and wife[b]	7.1*	15.8**	22.2	16.7	13.3	0.0	19.6
B type—operator[c]	50.0	33.3	20.0	33.3	42.9	25.0	28.6
B type—housewife	0.0	0.0	20.0	33.3	42.9	75.0	28.6
B type—operator and wife	50.0	66.7	60.0	33.3	14.3	0.0	42.9
C type—operator	91.7	86.7	70.0	42.9	62.5	66.7	58.8
C type—housewife	8.3	6.7	20.0	50.0	25.0	33.0	32.4
C type—operator and wife	0.0	6.7	10.0	7.1	12.5	0.0	8.8
D type—operator	0.0	100.0	50.0	0.0	0.0	0.0	33.3
D type—housewife	0.0	0.0	0.0	100.0	0.0	0.0	33.3
D type—operator and wife	0.0	0.0	50.0	0.0	0.0	0.0	33.3
C or D type—operator	91.7	87.5	68.2	40.0	62.5	66.7	56.8
C or D type—housewife	8.3	6.3	18.2**	53.3	25.0	33.0	32.4
C or D type—operator and wife	0.0	6.3	13.6	6.7	12.5	0.0	10.8

[a] The subdividing of relatively small groups by record types reduced sample size to such an extent that few comparisons were found to be significant at the .05 level.

[b] Data obtained from asking the question: Who keeps the farm records?

[c] B type records were considered the least useful and D type the most useful in making management decisions.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

Farmers' Estimates of Production, Expenditures and Living Costs.—If on the average the better farm managers do more formal planning than poorer managers, it seems reasonable to assume that the estimates of future events by those in the former classification would be more accurate than the estimates

Table 11.—Type of Production Planning Carried out by Farmers

Type of planning	Management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
	—per cent per group—						
(A) Figure in mind only—no paper calculations	13.3	10.0	9.7	20.0	15.0	20.0	14.8
(D) Produces what seems best—no paper calculations	20.0**	25.0	22.6	43.3	50.0	66.7	32.8
Do partly (A) and partly (D)	13.3	15.0	19.4	6.7	5.0	0.0	13.1
Total, no paper calculations	46.7*	50.0	51.6	70.0	70.0	86.7	60.7
(B) Figure possible gross income—a few paper calculations	13.3	10.0	6.5	10.0	10.0	6.7	8.2
Do (B) in some enterprises (D) in others	13.3	15.0	9.7	0.0	0.0	0.0	4.9
Total doing a few paper calculations	26.7	25.0	16.1	10.0	10.0	6.7	13.1
(C) Extensive calculations on income, expenditures and profit	26.7	25.0	32.3	20.0	20.0	6.7	26.2
Total doing at least some paper calculations[a]	53.3**	50.0	48.5	30.0	30.0	13.3	39.3

[a] There were no farmers doing (C) type planning who admitted doing (A), (B) of (D) type planning in even minor enterprises.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

of those in the latter classification. In the survey farmers were asked whether they usually (a) overestimated, (b) underestimated or (c) came close to the actual in estimating quantities produced, production expenditures and living costs. The findings shown in Table 12 indicate that as far as estimates on planned production and farm expenditures are concerned the upper management group tended to make better estimates than the lowest management group.

Allowances for Unforeseeable Circumstances.—In planning, some farmers make allowances for unexpected conditions. To meet such conditions the farmer may keep a small reserve in a bank, he may keep extra feed or other supplies, he may rely on either being able to sell farm animals or other products or he

Table 12.—Accuracy of Farmers' Estimates on Production, Farm Expenditures and Living Costs

	Management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
	—per cent per group—						
Actual production[a]							
Overestimated	13.3	15.0	12.9	20.0	20.0	20.0	16.4
Underestimated	13.3	20.0	22.6	20.0	20.0	20.0	21.3
Come close to actual	73.3	65.0	64.5	60.0	60.0	60.0	62.3
Actual production expenditures							
Overestimated	6.7	10.0	9.7	0.0	0.0	0.0	4.9
Underestimated	13.3	20.0	32.2	30.0	30.0	33.3	31.1
Come close to actual	80.0	70.0	58.1	70.0	70.0	66.7	63.9
Actual living costs							
Overestimated	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Underestimated	73.3	75.0	64.5	53.3	45.0	40.0	59.1
Come close to actual	26.7	25.0	35.3	46.7	55.0	60.0	41.0

[a] Quantity produced per unit (per acre, per cow, etc.).

may rely on his ability to borrow money quickly enough to meet his capital needs. Unforeseeable circumstances may involve immediate expenditures to prevent or to alleviate catastrophe or they may involve expenditures to take advantage of unusual opportunities. To discover their views on this subject, we asked farmers: How much extra cash do you think a farmer should have over and above his total contemplated yearly expenditures to take care of unforeseeable circumstances? For example, if you had a total yearly expenditure of $5,000, which of the following amounts of money do you think would be necessary to take care of unforeseeable circumstances, $250, $500, $750, $1,000 or $1,250? The answers indicated that the better managers tended to consider a larger reserve necessary for such circumstances than did the poorer ones. (Table 13).

Farm Production and Income.—Income and production data are often thought of as indicators of managerial ability. While good management undoubtedly effects both production and income, a high income does not necessarily indicate a high degree of managerial ability in operating the farm. The cause of a high income may be attributable to many factors. Where adequate records are available over a term of years and where the farmer is known to the researcher, the effect of management on income may be partially evaluated. In our study, we resorted to various means of checking up the accuracy of production data. There were many indications of the apparent tendency of the poorer managers to overestimate production especially animal production and, to a lesser extent, the production of field crops.

Table 13.—Farmers' Opinions on the Amount of Money Necessary to Take Care of Unforseeable Circumstances When Farm Expenditures are $5,000

	Management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
	—amount of money necessary—						
Additional cash required for a year when expenditures are $5,000..................	$943	$945**	$929**	$768	$783	$783	$850

**Significant at the .05 level or greater.

Farm Practices.—The acceptance and putting into operation of recommended farm practices are frequently referred to by agricultural economists and by rural sociologists as being closely associated with managerial ability. In our study, two major difficulties were encountered with respect to the formulating of questions concerning the implementation of such recommended practices. These were: (1) the difficulty of discovering farm practices which are of fairly recent origin and which apply to most of the farmers in all regions of the country, (2) the problem encountered where farmers recognize the value of certain recommended farm practices but, because of the relatively minor importance of the enterprise to which they apply, or because of financial reasons, have not implemented the practice or practices. Despite these difficulties, the answers to several questions indicated a fairly close relationship with levels of managerial ability.

Practices Related to Soil Fertility.—Soil fertility tests and the application of commercial fertilizer are widely recognized as recommended practices. The findings showed that whereas 93 per cent of farmers in the upper one-quarter group had had their soil tested, only 47 per cent of the lower one-quarter group had taken advantage of this service. Similarly, 87 per cent of the former group were using fertilizer on grain crops at the time of the survey compared with 24 per cent of the latter group. (Table 14).

Practices Related to Field Crops.—The data presented in Table 15 show a tendency for better managers to use both tested and treated seed grain. A reverse relationship is shown for the practice of having a carryover of hay to meet livestock needs in case of a feed shortage. The incidence of buying hay increases as managerial ability increases. Several explanations given by farmers for this situation seem to indicate that the better managers are convinced that some farmers will always grow more hay than their livestock can consume. Thus, if hay can be usually purchased at a reasonable price, it is frequently beneficial to reduce their own hay acreage and put the land to more profitable uses.

Table 14.—The Application of Commercial Fertilizer to Grain and Hay Crops

Farmers' activity in maintaining soil fertility	Management group						
	Upper ¼	Upper 1/3	Upper ½	Lower ½	Lower 1/3	Lower ¼	Total sample
	—per cent per group—						
Have had soil tested	93.3*	95.0*	87.1	66.7	55.0	46.7	77.0
Per cent growing grain crops[a]	100.0	100.0	100.0	86.7	85.0	80.0	93.4
Presently applying commercial fertilizer to grain crops	86.7	85.0**	83.9*	53.6	38.9	23.9	69.5
Not presently applying to grain crops but have at some time in the past[b]	0.0*	0.0**	3.2	19.2	23.5	41.7	10.5
Total who have used on grain crops, past and present[c]	86.7	85.0	87.1	73.1	64.7	66.7	80.7
Presently applying to hay or pasture land	33.0	30.0	29.0	13.3	10.0	6.7	21.3
Not presently applying to hay or pasture land but have at some time in the past	40.0	35.0	29.0	13.3	10.0	13.3	21.3
Total who have used on hay or pasture, past and present	73.3**	65.0**	58.1	26.7	20.0	20.0	42.6

[a] Does not include corn. When corn was included findings were similar.

[b] In many cases, these farmers had only used commercial fertilizer once or twice since they began farming. Some were not convinced the use of such fertilizer was profitable. The lack of adequate yield comparisons between fertilized and non fertilized crops was evident in most of these cases.

[c] All farmers who have used commercial fertilizer regardless of frequency.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

Pasture Management.—The forage or aftermath of hay fields after the hay has been removed usually provides a considerable portion of the grazing requirements of most farms. In considering the number of acres of grazing land used to meet the needs of cattle herds, it is therefore necessary to add to the pasture acreage an allowance for the grazing obtained from hay aftermath. In the present case, one-third of the acreage in hay was added. The total acreage thus obtained was then divided by the number of cattle kept in order to show the number of acres used to maintain each animal. The results, shown in Table 16, indicate that while the poorer managers used 3.3 acres per animal on the average, the best managers only used 2.3 acres per animal. In Table 14, the data showed that as managerial ability increased, there was a corresponding increase in the use of commercial fertilizer on hay and pasture land. The result of this practice is no doubt reflected in the pasture carrying capacity.

Table 15.—Farm Practices Related to Field Crops

Farm practices	Management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
	—per cent per group—						
Sowed tested grain this year	60.0	55.0*	51.6	48.1	41.2	33.3	50.0
Sowed treated grain this year[a]	100.0	100.0	100.0	88.0	88.2	83.3	94.6
Usually have hay carryover	66.7	70.0	80.6	86.7	90.0	86.7	84.0
Usually buy hay	33.0*	30.0*	9.7	0.0	0.0	0.0	10.0
Usually sell hay	6.7	5.0	6.5	6.7	5.0	6.7	7.0
Usually have grain carryover	53.3	55.0*	45.2	43.3	50.0	46.7	44.0
Type of troublesome weeds[b]							
Perennials	50.0	51.0	46.2**	65.8	62.5	67.6	55.6
Biennials	11.1	10.2	12.8	8.2	8.3	8.1	10.6
Annuals	38.9	38.8	41.0	26.0	29.2	24.3	33.8
Method of weed control[c]							
Spraying	37.0*	40.0**	35.8	15.4	3.8	0.0	27.2
Cultivation	25.9	25.7	24.5	30.8	30.8	36.8	27.2
Pulling	14.8	14.3	13.2	28.2	26.9	21.1	19.6
Mowing or pasturing	18.5	17.1	24.5	15.4	23.1	26.3	20.6
No control used	3.7	2.9	1.9	10.3	15.4	15.8	5.4

[a] A large number of farmers bought seed grain that was already treated.

[b] Farmers were asked to name their three most troublesome and to describe the control methods used on each. Weeds were later classified as perennials, biennials, or annuals.

[c] Methods most generally used to control most troublesome weeds.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

Machinery Management Practices.—In considering the efficiency of the management on farms, it has been a customary practice to focus attention on field crops, pasture, and animal production. The care given to the upkeep of farm machinery in order to lengthen the life of farm machines and so reduce outlays for new machinery has received less attention. In the days of horse-drawn implements, when the machinery owned by most farmers required little attention or mechanical knowledge, this disregard for machinery management may have been justified. Today the situation has completely changed. With modern mechanization of nearly all operations in farm production, and the increased size and efficiency of farm machines, the capital costs and repair expenditures on machinery on most farms have become major factors in profitable farm operations. The extent of mechanical knowledge and ability to repair machines possessed by a present-day farmer may be important factors in reducing farm expenditures and increasing efficiency.

Table 16.—Acres of Grazing Required per Cow

	Management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
Acres of pasture plus one-third of hay aftermath acreage	87.2	81.1	67.8	69.7	80.3	85.2	68.7
Number of cattle pastured[a]	38.9**	38.8**	34.3**	25.0	23.2	23.0	29.7
Acres of grazing per head	2.3	2.2*	2.0	2.7	3.3	3.3	2.3

[a] Does not include calves. The few horses maintained were put in terms of cow equivalents.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

On the assumption that there is a relationship between farm managerial ability and the time set aside to repair and overhaul machinery, farmers were questioned concerning this as well as on the facilities they had to do such repairing. We found that 87 per cent of the farmers in the lowest management group overhauled and repaired machinery only when the need arose whereas in the highest management group, 64 per cent of the farmers did overhauling and repairing in their slack seasons. In the former group, only seven per cent had winter overhauling facilities while in the latter group, 40 per cent had such facilities. (Table 17).

Time Spent Off the Farm by Operators.—The ability of a farmer to do hard and strenuous labor has frequently been considered in the past as a necessary criterion for success. While this may still be true, even more important today is the farmer's ability to solve increasingly complex problems. To fulfill his function as a manager of a farm business, the farmer must spend more of his time in planning, record keeping and analysis of records, in discussing and transacting farm business and in discovering the views of other people (top-ranking farmers, businessmen and professional agriculturalists) who are experts in fields related to the farmer's business. There must be time to discover new reliable knowledge that is pertinent to his own specific problems and there must be time for the farmer to get away from his own problems long enough so that he can get a new perspective on their solutions.

Table 17.—Machinery Repairing, Overhauling and Winter Overhauling Facilities

Period when repairing or overhauling is done	Management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
	—per cent per group—						
Winter	33.3**	25.0*	16.1*	6.7	0.0	0.0	11.5
Spring	13.3	10.0	6.5	0.0	0.0	0.0	3.3
Fall	13.3	10.0	9.7	0.0	0.0	0.0	4.9
Fall and spring	0.0	5.0	3.2	0.0	0.0	0.0	1.6
Only "as required"[a]	33.3*	45.0*	61.3**	86.7	90.0	86.7	73.8
No answer	6.6	5.0	3.2	6.7	10.0	13.3	4.9
Total doing in slack seasons	64.3*	52.6*	36.7**	7.1	0.0	0.0	22.4
Total assumed doing only "as required"[b]	35.7*	47.4*	63.3**	92.9	100.0	100.0	77.6
Farmers having winter overhauling facilities	40.0**	30.0**	23.0	7.0	5.0	7.0	15.0
Per cent having welding equipment	20.0	15.0	10.0	0.0	0.0	0.0	5.0

[a] This refers to repairing or overhauling only when machines break down or give trouble. It may frequently cause delays in farming at crucial times.

[b] Those not giving answers are included. In all cases where no answers were obtained, no shop facilities were present.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

It was shown in Table 8 that farmers in the upper management groups spent considerably more of their time in seeing agricultural advisers, in attending and taking an active part in meetings of all types and in writing to agricultural authorities than did farmers in the lower groups. While much of this activity would undoubtedly occur during evening hours, it is not surprising that the best managers also spent more days away from the farm in all pursuits than did the poorer managers. (Table 18).

Management Ability Indicators.—In the part of this article published in the April 1963 edition of The Economic Annalist, mention was made of how farmers in the sample were evaluated in terms of factors which were thought to have some direct relationship with managerial ability. Fourteen factor areas were evaluated without reference to answers obtained in the survey. The sole purpose of this evaluation was to provide a means of ranking farmers as nearly as possible in terms of their managerial ability so that questions and answers could be related to some form of scale of managerial ability. The assumption in doing this was that even after allowing for discrepancies in the scale, questions which brought hidden features of managerial ability to light should show a statistically significant relationship with the interim rating scale. In many cases this occurred, as evidenced in the tables presented. In other cases, questions which are generally associated with managerial ability did not appear to be very useful in evaluating management. Having eliminated many questions, the last phase of the research was to pull together those questions which seemed likely to throw more light on the managerial ability of farmers and then to assign numerical values to the answers, based primarily on the strength of the statistical findings and, to a lesser degree, on the extent to which useful questions appeared to duplicate some facet of managerial ability. This operation made it possible to revaluate and rank farmers according to the total value of their answers. Out of 237 question items only 63 were selected as possible management indicators. Further research would doubtless reveal that some of these indicators should be deleted and others added.

Table 18.—Days Spent Away From Farm Per Year by Operators

Reason for absence	Management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
Holidays[a]	2.9*	4.0*	2.9*	0.9	0.6	0.7	2.0
Farm business[b]	21.8	21.1	22.8	17.9	17.3	18.3	20.5
Community business[c]	1.5	2.5	2.5	1.1	0.7	0.6	1.8
Miscellaneous and pleasure[d]	11.0	9.9	11.8	10.5	10.4	10.5	11.2
Total days away from farm[e]	37.1	37.4	40.1*	30.6	29.3	30.2	35.5

[a] Any day or days spent in the pursuit of pleasure which took the operator away from the farm for at least 24 hours in each instance.

[b] Includes days spent away from the farm doing custom work and in exchanging labor with other farmers but not days spent in other employment. Hours spent in town or elsewhere on farm business were included providing they were spent during normal working hours and were not necessitated by the operation of the farm home.

[c] Total days spent in non-remunerative work for the good of the community or a group within the community. Does not include evening hours. If evening hours had been included, the time spent by the upper groups would have been greatly increased.

[d] This includes all time taken from normal working days that did not fit into other categories, for example; half-day holidays, shopping in town, visits to doctors or dentists offices, etc.

[e] Average number of days that operators spent off the farm during previous year. Sundays or evening hours are not included.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

Use of Managerial Ability Indicators.—Farm credit officials, bankers, merchants and dealers of all types who do business with farmers, frequently have to evaluate the managerial ability of farmers in order to assure themselves that the farmer will be able to meet credit obligations. Where farmers are relatively unknown to the businessmen, the evaluation will usually be based on the farmer's statement of his assets, liabilities and future prospects plus the evaluator's judgment of the farmer's ability as a manager. Data concerning a farmer's assets and liabilities will probably always be used as a guide to the granting of credit. However, as bankers and others have found out from experience, such data, if used exclusively in evaluating the situation, may result in either the over or under-extension of credit to certain farmers. Farmers who, through no fault of their own, have been affected by adversity and farmers who have inherited farms or have been especially fortunate in other ways offer examples of such situations. In these cases, the judgment of the businessman may be critical both to the future welfare of the farmer and to the firm or institution extending credit. Because of a lack of knowledge of questions that bring to light various hidden characteristics of management and because of a lack of knowledge of how such questions will be normally answered by farmers possessing various degrees of managerial ability, the business interviewer's evaluation may be heavily weighted by his intuition. The use of indicators of managerial ability may provide a partial answer to such interview problems. The selective use of management indicators may strengthen the evaluator's opinion obtained from financial statements, or may indicate that further information should be obtained from other sources before action is taken. While it is not expected that any single indicator will have much value by itself, the aggregate value obtained by using a fairly large number of indicators should be more reliable than intuitive judgment. This hypothesis remains to be tested.

EUROPEAN FARMERS' VIEWPOINTS ON AGRICULTURAL POLICY

A report submitted by Mr. René Blondelle, president of the Assemblée Permanente des Présidents des Chambres d'Agriculture de France, to the fifteenth general assembly of the Confédération Européenne de l'Agriculture, held at Cannes, France, September 30-October 5, 1963, reveals, in a most striking manner, the similarity of problems confronting farmers in the economically-developed countries of the world.

Our summary and review of Mr. Blondelle's report should be especially useful to people concerned with harmonization of trade relations among countries and with the development of production and marketing patterns that will contribute to the greater welfare of agriculture.

Mr. Blondelle first draws attention to the fact that, although agriculture is an occupation that benefits all mankind, farmers maintain that they are not adequately rewarded financially and that they do not enjoy the respect which they so well deserve. As every one else they yearn for better living conditions. But, when they look around, they find that the wages, salaries or income of other workers or entrepreneurs rise more rapidly and that these other income-earners have easier access to leisure and recreation facilities, and their children may receive a more advanced education and aspire to a more remunerative occupation. As an example of this situation, Blondelle cites the case of a country which is known for its very efficient economy and which has been following, for a long time, a system which may well be called a "parity" system since the prices of some of its major farm products are set in relation to the indices of certain industrial prices. The country referred to is the United States, a rich country where the industrial workers receive high wages, probably the highest in the world. Farmers enjoy a higher level of living than the farmers of Europe but markedly lower than that in other occupations within the United States. In his 1963 report to the U.S. Congress, the President said that net income per farm had risen by $300 in 1961-1962, whereas average general income, including agricultural income, had risen by $400 for a family of four.

Too Many Farmers.—Many people advocate a simple solution that would act as a cure-all to all of the disparity problems in agriculture. They say that if living conditions and income in agriculture lag behind living conditions and income in other occupational groups, this is because there are too many farmers and also because the rates of increase in productivity per agricultural worker are too low. The solution would thus consist in a more rapid exodus of a larger number of farmers which would lead to an improvement in agricultural structures.

Mr. Blondelle says that people find this language most convenient, since it is so vague. Means and objectives are very poorly defined, or, in any event, they are not appraised in the same manner by all people concerned. It is true that a smaller number of farmers and of agricultural workers implies an increase in the average size of farm and a larger output per man, assuming that acreages and yields remain about the same. Still, it is essential, if this is in fact the goal to be aimed at, that the difference between farm receipts and production costs other than labor and capital costs be such as to make it possible to secure greater labor and capital returns. There is no assurance that it will be so.

Mr. Blondelle draws on statistics published by the OECD to illustrate the spectacular decline in the farm labor force in relation to the total labor force, in recent years, in various Western countries (Table 1).

TABLE 1.—Agricultural Labor Force as a Percentage of Employed Civilian Labor Force (based on food and agriculture statistics compiled by the OECD—1962)

	1950	1954	1960
Canada	23	19	13
United States	13	11	9
Austria	33	32	28
Belgium-Luxembourg	12	10	8
Denmark	25	23	20
France	33	28	23
Germany	25	20	14
Italy		40	31
Netherlands	14	13	10
Norway	31	27	23
Sweden	20	17	13
Switzerland	17	14	12
United Kingdom	6	5	4

No Farmers, No Agriculture.—Most people realize that the decline in hours of labor in agriculture will follow the decline that will occur in other occupations. It may even proceed at a more rapid pace since the existing gaps will, very likely, have to be filled in the not too distant future.

Generally speaking, people rely on mechanization to replace farmers who leave the farm. Mechanization is forging ahead quite fast but it will not proceed at the same pace in every type of farming and a depletion of the farm labor force may, in a short time, have a greater impact on production trends than the impact that results from price trends resulting from the supply-demand ratio.

To support his thesis that the continuous decline in the number of farmers has not led to a higher financial remuneration in agriculture, Mr. Blondelle quotes the FAO statement that "... in every country for which there are available indices of prices paid by farmers for production purposes, including wages, interest, and taxes (sometimes including living expenses as well) have risen significantly in recent years. Except in a few countries, price relationships have become less favorable for agricultural products in spite of subsidies and other measures to raise or stabilize farm prices."[1]

In other words, the terms of trade have worsened for agricultural producers. This worsening in the agricultural price situation expressed in terms of goods or services needed for the management of the farm and family subsistence may be assesed by the ratio between the index numbers for "prices received" and index numbers for "prices paid". This gives a "parity index". According to calculations made by the Chambres d'Agriculture, and based on official figures, this index (1948=100) has dropped, in French agriculture, from 75 in 1952 to 65 in 1962. Figures for other European countries may differ but the general trend is the same even if, in some countries, a slight increase may have occurred for a few or in certain years.

Some people, according to Mr. Blondelle, find it reasonable that agricultural prices follow a downward trend, arguing that agriculture is at one and the same time insufficiently and too productive. It is just as if surpluses of agricultural products in a few regions of the world, and for only a brief period, were considered, by poorly-informed people, as more serious economic disasters than malnutrition, that permanent social evil which affects two-thirds of the population of the world. According to FAO, food supplies do not increase as fast as needs, which explains why this organization has undertaken its Freedom from Hunger Campaign with such widespread publicity.

Balance of Accounts.—The international market for agricultural products is only a residual market where price fluctuations do not correspond to the global gaps between resources and real needs. It is thus necessary, in any appraisal or intervention, to take account of the extreme sensitiveness of the world market and of the amplitude of the changes which are likely to affect that market. To shelter the national markets from sudden and large fluctuations is not to fall prey to autarkic whims; it is only a way of handling a situation and of avoiding the risks of serious distortions which would affect producers' income and consumers' purchasing costs.

The unrestrained competition and the downward price trends in recent years are not so imputable to producers, in most cases, as they are the indirect result of a competitive situation in which national budgets really come into play.

Mr. Blondelle says that this is the very point to which Mr. Wilfrid Baumgartner, then Minister of Finance, drew attention on behalf of France, in his statement of November 27, 1962, at the GATT general meeting in Geneva.

The balance of accounts between countries, at the international level or between various professional groups within the national economy is a double-entry type of accounting. The deficits of some countries or professional groups equal the surpluses of others. This balance of accounts must be viewed within a broader concept than the balance of payments and, therefore, than the balance of trade, which is only an element of the latter.

Much is now being said in the United States about the current deficits in their belance of payments. This deficit makes it difficult for the U.S. to support the dollar. It may also lead to changes in relative prices on the world market and give rise to an urgent need to adopt concerted measures for the orderly marketing of certain basic products.

In the past, the American continent gained advantage from a continuous inflow of labor for whose education it did not have anything to pay, and which, to boot, was imbued with the pioneering spirit. A similar phenomenon occurs within a country. Agriculture, when it operates as a reservoir of human labor, has a claim on these other sectors which its emigration literally feeds with productive factors. These "transfers", up to now, have not been recorded in her credit column nor in the debit column of others.

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[1] The State of Food and Agriculture, 1962. FAO, Rome, 1962. pages 50-51.

So, one may see that economic "growth" has been made possible, in part, by the great progress achieved by European agriculture, especially since the 19th century. Agriculture has been producing more food for a growing population, while regularly making a large part of its labor force available to other occupations. Without this migration of workers and capital from agriculture, the secondary and tertiary sectors of the economy would not have had their industrial revolution.

Agriculture and Industry.—Industrial expansion would be impeded if, owing to "disparities" of an inequitable social character, and with ominous economic implications, there was no longer any, or not enough motivation left to spur the entrepreneurs to action, and insufficient means to reward labor and the other needed production factors.

Public opinion is so attracted by tables showing indices of output and of productivity in the industrial sector that it is inclined to credit this sector with an autonomous capacity to raise the levels of living of the population. In doing so, it underestimates the prime importance of the contributions made by agricultural production and agricultural productivity to the general welfare.

People are not concerned solely with income. They find pleasure in their mutual contributions to a better society, in what the country offers to urban life, and vice versa. In recent years, in France as well as in several other countries, certain salaries, especially in the peak industries, have risen faster than productivity. Not long ago, the French government, when it raised the guaranteed interprofessional minimum salary, pointed out that the percentage of increase corresponded not only to the rise in consumer price index numbers but also to an anticipation of gains in productivity.

This was the time when agricultural prices, expressed in terms of means of production or of subsistence goods, suffered a different fate. The results of agricultural production have been attributed, part to the increase in processing costs, part to the consumers, and seldom to agricultural labor.

Adequate Solutions.—Agriculture is a mosaic of production enterprises which operate under very different conditions. It may not be any exaggeration to say that each one of them presents itself in a different light. Principles or measures common to a group, a class, or to the whole may thus be devised only on the understanding that they be confined within a broad outline. If they are not to remain a dead letter, they must leave to those who are in daily contact with reality the job of leading the march toward progress, for which the best stimulant resides in the advantages to be derived from progress achieved. Each one of them will, at the same time, contribute its own share to over-all efficiency.

Nothing, in fact, tells us that if all farms were to pass through the same mold, and if they were all to abide by the same instructions, production and productivity would thus be encouraged. Agriculture is not operating under the same conditions as industry and industry itself does not always find the "ready-made programs" very workable.

The expert themselves are at grips with a "doubting devil". Their forecasts and the methods which they have advocated, whether they apply to monetary problems or to industrial expansion, have suffered from so many vicissitudes that they, the experts, cannot help but display a great deal of discretion.

In a well developed and extremely complex economy it is quite difficult to suggest an approach that be in fact dictated by a certain number of natural laws. One might then choose to forget about the fundamental character of labor and of the way of life of the western world, without being assured of launching a more rapid economic growth. Even then, one would have to be sure that optimum growth would lead to greater welfare.

Even though we are in an "industrial" era, the agricultural civilization retains its particular character, without breaking away from the economic complex of which it is a part. There is no ground for quarrel between agriculture and industry but account must be taken of certain differences so that the balance of exchanges between various sectors of economic activity may be assessed, quantitatively as well as qualitatively.

Farmers are not beggars. They make continuous progress. Because of their efforts, famines have disappeared from several countries and are subsiding in others. Even better results would have been achieved if there were no political, financial or other impediments to the movement of products from rich to poor countries.

Elimination of "Discriminations" and "Disparities" Affecting Agriculture.—There is, in some European and other countries, a "legislation framework" that may be called "parity law" since the objective, in its essential terms, is to gradually fill up the gap and to maintain equivalence between agricultural income and income from other occupations.

Even if, in too many instances, the effects of this legislation do not measure up to the hopes entertained by the farmers it must not be done away with. The principles set forth in this legislation can be translated into facts only through the efficient working of the arrangements made, rules laid down, or steps taken for its application. It has at least the merit of facilitating exchanges of views, at more or less frequent intervals, between law-makers and agricultural organizations.

Price-making.—When discussing agricultural prices or farm income, people bandy about such expressions as well-managed farms, or firms, and economic units, and, in a somewhat different manner, such terms as marginal farms, agricultural under-employment, etc.

Still, one may not find it too easy to give a clear definition of each of these terms and to show what they correspond to in real life. A masterful idea must serve as a guiding hand in matters relating to agricultural prices, an idea that will make it possible to bring about a set of conditions that will enable farmers to secure a fair income for a fair amount of work.

Mr. Blondelle frowns on imports of agricultural products from other countries. It is not quite clear whether he tends to object to imports from any country or only to imports from countries outside the European Confederation of Agriculture. In any event, he says that he finds it difficult to repress the thought that, among those at the head of affairs, prevails the opinion that it is possible to get lower prices from agricultural producers in distant countries. Supposedly, a greater efficiency is credited to these producers, when, in fact, they are resigned to lower prices for more arduous and longer hours of work; or, ultimately, the economy of the supplying countries, and, so to say, all their resources and labor subsidize consumers in purchasing countries. One may, at times, so says Mr. Blondelle, suspect that in certain spheres of influence, there is some fear of running short of foreign currency for exports of industrial products if support of farm incomes does not provide enough room for imports from third countries. He says that, no country, even among the wealthiest ones, can long follow a policy whereby an increasing share of national demand is met by ever-larger imports. Such a policy can only lead, in the end, to an inferior status for national production, which then threatens to decline seriously. Results: the danger of a decline in gross national product, and risks concerning dependability and ultimate costs of supplies, to the purchasers.

Farmers and World Markets.—Agricultural producers would err, if they were to quarrel about supposedly inadequate market outlets when, in fact, agricultural production fails to meet world food consumption requirements. The supplies of certain products, owing to their relative importance and the length of their existence, strike popular imagination in a distorted manner. They are brandished as scarecrows and help depress markets. Forecasts of surpluses, even if they do not materialize, have about the same effect on prices as if they already existed and give rise to problems that do not have much more than a theoretical character. Faced with oligopolistic groups of sellers of products needed in the management of their farms and for their livelihood, farmers would be working against their own very interests if they took part in a race that would have all the characteristics of an elimination tournament for farmers. This would be most illogical, considering the fact that market outlets which now appear to be inadequate, partly because of inaccurate estimates, do actually increase in a consistent manner. They will, after all, continue to expand and match the needs, that will ultimately be translated into effective demand of those who do not yet have the needed purchasing power. The trend is toward the widening of agricultural markets through the increase in purchasing power of a larger number of consumers.

The president of the A.P.P.C.A. says that one must not reject, without any scrutiny, the argument that the consumer shoulders the load when agricultural prices are so raised as to cover the costs of production that would enable agriculture to pay its labor at a rate equal to rates prevailing in other industries in agricultural communities and to assume itself all its production expenses. But, one may note that, instead of being an economic heresy, this is simply a return to normal conditions after a system of artificial markets which have developed, little by little, under the sway of other economic powers, or following public intervention made necessary by abnormal situations, and which have had aftereffects other than those intended.

(to be continued)

NOTE

CANADIAN AGRICULTURAL ECONOMICS SOCIETY

The 34th annual meeting of the Canadian Agricultural Economics Society will be held June 22-25, 1964 at the University of New Brunswick, Fredericton. The three topics of discussion will be International Trade, Land Tenure and Philosophy, and Use of Statistics.

The theme of the 1964 Workshop of the Society, to be held at Macdonald College, June 17-20, 1964, will be Interregional Competition in Canadian Agriculture.

PUBLICATIONS OF THE ECONOMICS DIVISION

Co-operation in Canada, 1962 (La coopération au Canada, 1962). 31st Annual Summary. Fortier, R. Ottawa. October 1962. pp. 28.

This thirty-first issue of the annual report on Co-operation in Canada has a section on Co-operatives in the Arctic and the usual sections on Marketing and Purchasing Co-operatives, Service Co-operatives, Fishermen's Co-operatives and Co-operative Wholesales.

Urban Family Expenditures for Certain Milk Products. Johnston, Charlotte, I. Ottawa. November 1963, pp. iii + 36.

An analysis of unpublished data, collected by the Dominion Bureau of Statistics in 1957, as part of a study of food expenditures in the metropolitan areas of Halifax, Montreal, Toronto, Winnipeg, and Vancouver. It shows the relation between known family characteristics and rates of purchases of various kinds of fluid milk and cream, and canned and powdered milk.

Effect of Price on Butter Sales. LeBel, Gilles. Ottawa. November 1963, pp. 14.

A review of price and consumption trends, for butter and margarine, in selected countries.

A Study of Rural Problems in Madawaska County, New Brunswick. Retson, G. C. and P. R. L'Ecuyer. Ottawa. November 1963. pp. 61.

A report on a study of the major rural problems of Madawaska County. This study was undertaken at the request of the Madawaska County Federation of Agriculture, the principal farm organization in the county, and carried out as a joint project by the New Brunswick Department of Agriculture and the Economics Division of the CDA.

The report is chiefly concerned with the farm family, family income, farm organization and changes in farm organization, off-farm employment, farm markets, farm credit, taxation, farm and rural facilities, and population movements.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.
Sold in Canada by the Queen's Printer, Ottawa.

Manual on Household Food Consumption Surveys. FAO Nutritional Studies, No. 18, Reh, Emma. Food Consumption and Planning Branch, Nutrition Division, FAO. Rome, Italy. 1962. pp. ix + 96 and 5 Annexes. Price: $1.00.

This FAO manual deals with the collection of data on food consumption and the interpretation of these data in terms of nutritive value and in relation to nutritional requirements.

Progress in Land Reform. Third Report. Prepared jointly by the Secretariats of the U.N., the Food and Agriculture Organization of the U.N. and the International Labour Organization. Department of Economic and Social Affairs. New York. 1962. pp. vi + 104. Price=$U.S. 1.50 (or equivalent in other currencies).

A sequel to the two reports on progress in land reform issued in 1954 and 1956.

The 1962 report notes that "Recognition of the importance of land reform in agricultural development has been more marked in the period since the presentation" of the 1956 report "than at any previous stage. A vastly increased number of countries in the various regions have given prominence to land reform measures in their development effort. Every region has registered striking progress in this field. In some countries, notably the United Arab Republic, land reform has underpinned the drive for social and economic progress in the same way as it once did in Mexico".

The report itself is chiefly concerned with a review of progress in land reform in various countries; the impact of land reform on agricultural productivity and output, employment, wages, and living conditions; the financing of land reform; and the relationships of land reform with community development.

Study of Discrimination in the Matter of Political Rights, by Herman Santa Cruz, Special Rapporteur of the Sub-Commission on Prevention of Discrimination and Protection of Minorities. U.N., New York. 1962. pp. viii + 105. Price: $U.S. 1.50 (or equivalent in other currencies).

The third in a series of studies undertaken by the Sub-Commission on Prevention of Discrimination and Protection of Minorities with the authorization of the Commission on Human Rights and the Economic and Social Council. It is chiefly, as noted in the Foreword, "a global survey of the nature and extent of discrimination in the matter of political rights, intended to serve as a foundation for proposals directed towards the eradication of such discrimination."

Economic and Social Consequences of Racial Discriminatory Practices. Economic Commission for Africa. U.N., New York. 1963. pp. 84. Price: $U.S. 1.00 (or equivalent in other currencies).

A study which clearly indicates that deliberate racial discrimination in the distribution and ownership of land, in several countries, has led not only to "the geographical segregation of the different racial groups, but also" to the "inequitable distribution of land, racially restrictive practices with regard to property ownership, differential policies regarding agricultural and extension services, and credit and market facilities."

New Sources of Energy. Proceedings of the Conference, Rome, 21-31 August 1961. Volume 1. New York. 1963. pp. ix + 218. Price: $U.S. 2.50 (or equivalent in other currencies).

This volume contains the papers and reports relating to the following agenda items of the Conference: (1) New sources of energy and energy development, and (2) Combined use of various energy sources and energy storage problems.

OTHER PUBLICATIONS

PERT, A New Management Planning and Control Technique. Stilian, Gabriel N. and others. Blood, Jerome W., Editor. American Management Association. New York. 1962. pp. 192. Price: $6.00.

PERT (Program Evaluation and Review Technique) was originally developed by the United States Air Force. It is a most valuable management tool for precision in decision making and for planning and controlling non-routine operations which involve critical time and cost considerations.

"The important thing" says Stilian in his Author's Note, "is that the executive in business have available an effective method of making a profit for his company by doing a better management job." The purpose of the book itself is to "start the reader in this direction". The reader, in this case, is the non-specialist who wishes to find out about PERT and learn how it can help him plan and control his own particular operations. He will find his answers in the four well-organized sections of the book: PERT and the Manager; PERT Theory; Practical Experience with PERT; and Allied Techniques. The text is conveniently supplemented by a six-page bibliography.

Our Food Costs. Canada Department of Agriculture. Publication 1167, July 1963. pp. 7 + 7 charts. Single copies, available free from the Information Division of the Department of Agriculture. Larger numbers, available at seven cents a copy from the Queen's Printer.

A revised version of a 1958 publication on food costs in Canada. The seven charts, accompanied by explanatory text on preceding page, describe: (1) Cost of Week's Food for Family of Four; (2) Disposable Income per Person per year; (3) Baskets of Food which could be Bought with One Week's Income; (4) Percentage of Disposable Income Spent on Food; (5) Consumption per

Person of Specified Food Classes; (6 and 7) Quantities of Specific Food Which Could be Bought with One Hour's Wages in Manufacturing Industries, 1948-50 and 1962.

Report on Costs of Milk Production for the Year Ended 30th September 1962. Mackintosh, Evelyn G. Economic Report No. 79. The Edinburgh School of Agriculture, West Mains Road, Edinburgh 9, Scotland. August 1963. pp. 14.

As noted in the Foreword, by J. D. Nutt, Advisory Economist, "Information on the costs of milk production continues to be of great importance to considerable numbers of farmers in the East of Scotland. The production of milk in association with arable cropping offers the opportunity of increasing the farm turnover and, when carried out on efficient lines, should lead to higher profit. In other cases, milk production may be the sole enterprise to which the farm resources are devoted; this is especially the case on the small holdings which must push their turnover to the maximum if they are to make any sort of living."

The report itself deals with milk production costs for 30 herds in the East of Scotland and covers a wide range of conditions. It supplies data on average costs per cow and per gallon of milk, for winter and for summer production, compares the results of an identical sample of 28 herds for 1960-61 and 1961-62, contrasts the costs and the returns, for the four highest and the four lowest yielding herds in 1961-62, and gives some details on the feeding of dairy cows.

Dairy Farm Business Analysis, Eastern N.S., Year 1962. Grant Walter V. and Jean Lelacheur. Farm Management Division, Extension Service Branch, Nova Scotia Department of Agriculture and Marketing. Truro, N.S. September 1963. pp. 5.

A business analysis of 42 dairy farms located in the six eastern N.S. counties.

Economic Planning in Peasant Agriculture. Clayton, Eric. Available from: The Secretary, Department of Agricultural Economics, Wye College (University of London), Ashford, Kent, England. 1963. pp. ix + 69. Price: 7/6.

A monograph on the optimal economic use of land, labor and capital by peasant farmers in some parts of Kenya. People concerned with agricultural policies in the less-developed areas of the world will be especially interested in techniques used to develop optimal resource and product combinations, and "normative" supply schedules.

A Look at Low Income in a Rural Area. Low Income in the Tweed Forest District of Ontario. McBean, A. B. and H. C. Abell. Department of Extension Education, Ontario Agricultural College, Federated Colleges of Ontario, Guelph, Ontario. Publication No. 1. September 1963. pp. iii and 15.

A report on a study designed to increase knowledge of income and other social and economic conditions prevailing in the Tweed Forest District and of the aims and attitudes of people living in that District.

Accounting in the Smallholders Agricultural Co-operative Villages in Israel. More, Isaac, Audit Union of the Workers' Agricultural Co-Operative Societies Ltd., Tel-Aviv, Israel. 1963. pp. 48.

The introductory sections of this report give a concise and most interesting description of the Moshav (the smallholder's co-operative village), its structure, social and economic organization, and the chief objectives and principal functions of its management.

In the words of the author, "It is hoped that this publication will be of interest to students of co-operation and to members of co-operative movements, making some contribution to co-operative knowledge and experience, so essential to the progress of co-operation towards the realization of its great ideals which, despite the variety of clime, conditions and environments, are common to the co-operative movement the world over."

THE ECONOMIC ANNALIST

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ECONOMICS DIVISION

S. C. HUDSON, Director-General

APRIL 1964 **Vol. XXXIV No. 2**

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G. P. BOUCHER, Editor

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935-39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	240.8	195.5	286.0	272.8	290.8	235.1	130.7	126.2	186.1
1963	244.6	229.9	184.4	275.4	259.3	298.7	237.6	133.0	130.3	196.2
1963										
Jan.	243.0	239.6	195.8	283.3	269.8	293.1	237.6	132.0	129.0	190.2
Feb.	242.8	236.7	199.6	273.8	268.6	....	....	132.1	129.4	191.3
Mar.	242.4	234.7	200.5	268.8	265.8	....	....	132.1	128.9	193.5
April	242.8	231.6	196.6	266.6	262.2	301.1	238.3	132.3	128.9	192.9
May	244.4	234.5	197.1	271.9	263.4	....	....	132.3	128.3	194.7
June	245.7	240.1	200.1	280.1	268.8	....	....	132.8	129.7	195.1
July	246.2	242.3	198.6	286.1	271.8	....	....	133.5	132.5	191.9
August	244.7	227.6	169.6	285.6	251.7	302.0	237.0	133.9	133.2	194.9
Sept.	245.0	224.5	163.9	285.2	252.1	....	....	133.4	131.3	198.1
Oct.	245.9	216.7	163.3	270.1	247.3	....	....	133.6	130.4	200.2
Nov.	246.7	216.5	163.1	269.8	245.0	....	....	134.0	130.8	203.5
Dec.	245.3	213.9	164.7	263.1	244.5	....	....	134.2	131.4	207.7
1964										
Jan.	246.9	215.8	167.3	264.2	244.0	299.6	242.5	134.2	131.4	210.8
Feb.	246.1	215.9	165.6	266.2	245.1	....	....	134.5	131.3	212.3
Mar.	245.6	215.1	164.7	265.6	245.5	....	....	134.6	131.3	210.2
April	245.6	215.4	165.7	265.0	245.8	....	....	135.0	131.8	215.1

Note:—See earlier editions for index numbers previous to 1926.
Source:—Dominion Bureau of Statistics, Ottawa.
(a) 1964 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

Gross National Product.—Canada's GNP expanded steadily in 1963 and rose to $43.0 billion from $40.3 billion in 1962. As over-all prices increased by less than two per cent, more than two-thirds of the increase in value represented a gain in real output. The three per cent increase in the final quarter was one of the sharpest gains since the start of the continued expansion early in 1961. The expansion was widespread; all components of final demand contributed to growth.

Although the expansion in final demand was generally balanced, the 11 per cent jump in merchandise exports and the contraction in the deficit on current account transactions with other countries were the salient developments in 1963. The rise in exports was stimulated by the very large shipments of wheat to Russia in the final quarter of the year, but the increase in foreign demand was spread over many commodities. The growth in exports occurred in a year of increasing world trade, expanding economic activity in the major industrial countries, and of apparent improvement in the competitive position of Canadian industry.

Over-all imports rose by just over 5.5 per cent; this average figure for the year, however, masks the relatively greater importance of the supply of foreign goods and services in the last six months of the year. Business fixed capital formations also proceeded at a rapid rate and recorded the most pronounced relative year-to-year increase since 1956-57; the rise was particularly evident at the end of the year, especially in housing, when special Federal Government legislation designed to stimulate winter housebuilding came into effect. Consumer demand recorded a higher than average year-to-year increase and was especially strong in the second half of the year; it accounted for more than half of the total increase in the GNP.

Government expenditures on goods and services rose sharply at the beginning of the year but declined slightly in the last three months, owing to lower spending by the Federal government.

In summary, gross national expenditure, in the last two quarters of 1963 and for the whole of 1963 as well as for 1962, seasonally adjusted at annual rates and in millions of dollars, was as follows:

	1962	1963	1963	
			Third quarter	Fourth quarter
Consumer expenditure	25,739	27,230	27,396	27,968
Government expenditure	7,709	8,076	8,152	8,048
Residential construction	1,577	1,705	1,680	1,880
Non-residential construction	2,638	2,811	2,812	2,900
Machinery and equipment	2,745	2,979	3,008	3,136
Value of physical change in business inventories	301	166	264	384
Farm inventories and grain in commercial channels	221	293	316	68
Exports of goods and services	8,224	9,054	9,032	9,652
Imports of goods and services	−9,033	−9,542	−9,804	−10,044
Residual error	218	235	220	340
Gross national expenditure	40,339	43,007	43,076	44,332

External Trade.—Canada's commodity imports in February 1964 reached a monthly record value of $514.2 million, exceeding by 19.2 per cent the February 1963 total of $431.2 million and by 13.8 per cent the preceding February peak of $451.9 million set in 1960. February exports reached a high point, for the month, of $549.0 million and exceeded by 25.4 per cent the previous peak of $437.7 million reached in 1963. The resultant export surplus in commodity trade in February rose to $34.8 million in 1964 from $6.4 million in 1963.

The value of imports in the January-February period rose to $1,085.6 million in 1964 from $936.0 million in 1963 and the value of exports rose to $1,183.1 million from $984.5 million. The January-February export balance rose to $97.5 million in 1964 from $48.5 million in 1963.

Canada's exports to and imports from the four main geographic areas, in millions of dollars, were as follows:

	Total exports		Imports	
	1963	1964	1963	1964
February				
United Kingdom	57.6	73.1	30.1	37.4
Other Commonwealth and preferential countries	23.9	30.1	22.3	16.7
Total	81.5	103.2	52.3	54.1
United States	266.3	320.8	313.5	380.0
Others	89.9	124.9	65.4	80.1
Total, others	356.2	445.8	378.9	460.1
Grand total	437.7	549.0	431.2	514.2
January—February				
United Kingdom	136.3	185.0	67.1	76.6
Other Commonwealth and preferential countries	57.7	67.6	43.7	43.9
Total	194.0	252.7	110.7	120.5
United States	582.7	631.1	681.3	798.9
Others	207.8	229.4	143.9	166.2
Total, others	790.5	930.5	825.2	965.1
Grand total	984.5	1,183.1	936.0	1,085.6

Labor.—Total employment in Canada rose to 6,273,000 in March from 6,223,000 in February 1964. The increase was well above the average for the last several years. The labor force rose to 6,729,000 in March from 6,690,000 in February. Unemployment declined slightly to 456,000 in March. Employment rose by 310,000 from March 1963 and unemployment declined by 93,000. The labor force rose by 217,000.

Non-farm employment rose by 63,000 from 5,653,000 in February to 5,716,000 in March. Usually, in the past, non-farm employment had decreased slightly over this period. Farm employment declined by about 13,000 during the month. Non-farm employment was 309,000 higher than in March 1963; about two-thirds of the total increase was in manufacturing and services. Agricultural employment remained at the same level.

Retail Trade.—Retail sales rose by 12.5 per cent, to about $1,378.9 million in February 1964 from $1,225.3 million in February 1963. Sales in the January-February period rose by 11.4 per cent, to $2,829.9 million in 1964 from $2,540.2 million in 1963.

Consumer Prices.—Canada's consumer price index (1949=100) rose to 134.6 at the beginning of March from 134.5 a month earlier and 132.1 a year earlier. The food component of the index remained at the February level of 131.3. Prices were higher for most fresh and canned fruits and vegetables, cookies and sweet biscuits, coffee, butter and shortening, and some cuts of meat. Price decreases occurred for sugar, beef, pork chops, chicken and eggs.

RECENT LAND USE AND FARM ORGANIZATION ADJUSTMENTS IN THE PRAIRIE AREA OF SASKATCHEWAN

R. A. Stutt

In the prairie area of Saskatchewan a number of important and effective changes in land use and farm organization have recently taken place. In general, adjustments of this nature have served to enhance the inherent physical and economic capabilities of the land resource. These have resulted in increased stability of agricultural production, financial security, and a higher level of living for the operator and his family. These conclusions are borne out by an examination of available economic information for the last decade.

Certain economic data for six rural municipalities representative of poor, medium and good grades of land in each of the Brown and Dark Brown soil zones were selected to portray the situation, in lieu of a full appraisal of the entire area. Adjustments with respect to land use, size of farm, number of farms, livestock numbers, type of farm, economic farm class, tenure, farm population, age of farm operator, farm operator residence and off-farm employment can be traced from the 1951 and 1961 Census of Agriculture and reports of the Economics Division on an economic classification of land and on farm organization studies.

The selection of representative municipal units was facilitated by their inclusion in a series of change in farm organization studies which have been underway since 1954. These studies in Saskatchewan represent farms of grain and grain-cattle types subdivided into small, medium and large size categories. Samples of farms are included from light, medium and heavy textured soils of each zone.

The rural municipalities chosen for this appraisal are typical of five classes of land rated on the suitability for wheat production. Under this system, quarter sections of land were rated on a comparative basis in terms of wheat-yielding and income-earning capacity. This project, an economic classification of land, was carried out by the Economics Division during the 1937-1951 period. The selected rural municipalities are separated here into three broad groups as predominantly poor, medium and good grades, i.e., (*a*) land classes I and II (submarginal and marginal), (*b*) land class III (fair wheat land), and (*c*) land classes IV and V (good and excellent wheat land). The representativeness of the selected municipal units are shown in Table 1.

Table 1.—Total Acreage and Percentage in Each Land Class of Representative Municipal Units, Saskatchewan

	Rural Municipality	Total Acreage	Land Classes				
			I	II	III	IV	V
			—per cent—				
Brown soil zone							
Poor grade	Piapot 110	205,183	74.2	14.8	10.1	0.9	—
Medium grade	Lawtonia 135	206,093	11.1	15.9	55.6	17.4	—
Good grade	Lacadena 228	288,009	20.4	6.5	11.6	20.1	41.4
Dark Brown soil zone							
Poor grade	Montrose 315	217,803	59.5	18.3	19.7	2.5	—
Medium grade	McCraney 282	235,086	31.4	27.9	40.7	—	—
Good grade	St. Andrews 287	204,096	6.3	3.7	6.1	14.3	69.6

Source:—An Economic Classification of Land. Unpublished data. Economics Division, Department of Agriculture.

Further evidence of the level of productivity of these municipal units is provided by information on wheat yields (Table 2). In all municipal units, wheat yields in the 1951-1952 period are above those of other recent decades.

Table 2.—Average Wheat Yields for Rural Municipalities Representative of Poor, Fair and Good Wheat Lands, Saskatchewan

Period	Brown soil zone			Dark Brown soil zone		
	Rural municipalities no.					
	110 (Poor)	135 (Fair)	228 (Good)	315 (Poor)	282 (Fair)	287 (Good)
	—bushels per acre—					
1918–1930	13.0	14.8	14.9	11.3	13.4	18.0
1931–1940	7.2	4.8	10.3	8.3	8.9	14.7
1941–1950	7.3	10.3	13.5	10.7	13.0	16.4
1951–1962	15.0	16.6	21.2	14.1	15.9	22.2
1918–1962	11.0	12.1	15.2	11.2	13.0	18.0

Source:—Supervisor of Statistics. Saskatchewan Department of Agriculture.

Number of Farms and Farm Population.—The number of farms in the representative municipal units follows the general trend of decrease as throughout Canada. In the Brown soil zone, there was a decrease of 15.7, 11.5 and 10.9 per cent between 1951 and 1961 in the poor, medium and good grades of land, respectively. In the Dark Brown soil zone, decreases of 14.4, 13.0 and 18.8 per cent occurred in the comparable grades of land and period of time.

While farm population decreased during the same decade, the rate of decrease was considerably less on the poorer grades of land as compared with the other grades. The population rate of decline was also lower than the rate of decline in number of farms for each grade. This suggests attainment of a measure of farm population stability and improvement in farm scale and income-earning capacity. In the case of the poorer grades of land, most of the farm depopulation occurred during the 1930's and 1940's. In the representative municipal units the decrease in farm population from 1951 to 1961 was 10.3 and 8.3 per cent on poor lands, 13.5 and 28.8 per cent on medium lands, and 10.5 and 19.0 per cent on good lands in the Brown and Dark Brown soil zones, respectively. Changes in farm numbers and farm population have continued to facilitate desirable adjustment to resource capacity and farm family needs.

Use of Land.—Little change took place in the amount of occupied farm land from 1951 to 1961. Improved land increased slightly in area as well as a percentage of the occupied farm land. This figure in 1961 was 34.8 and 59.3 per cent for poor lands, 84.1 and 80.1 per cent for medium lands, and 74.8 and 94.4 per cent for good land in the Brown and Dark Brown soil zones, respectively.

A number of important changes have taken place with respect to the use of improved land, as illustrated in Table 3.

First, there was a drop in the proportion of improved land under crops, especially in the Brown soil zone. This was most apparent on the poorest grade of land. Some of the decrease can be attributed to an increase in summerfallow and a general adoption of a two year summerfallow-crop rotation system. Second, was a reduction in the proportion of improved land devoted to wheat, the most significant of which occurred on the poorer grades of land. Third, was a sizeable and encouraging increase in the proportion of improved land devoted to grass for pasture or hay purposes on the poorer grades of land. These kinds

Table 3.—Utilization of Improved Land for Representative Rural Municipalities in Saskatchewan, 1951 and 1961

	Per cent of total improved land					
	Under crops		Wheat		Improved pasture and tame hay	
	1951	1961	1951	1961	1951	1961
Brown soil zone						
Poor grade	72.7	60.8	37.7	29.0	9.3	12.9
Medium grade	56.1	53.0	47.3	45.2	1.7	2.1
Good grade	63.1	55.8	54.6	42.6	2.5	2.2
Dark Brown soil zone						
Poor grade	70.1	58.3	39.0	32.3	8.5	13.2
Medium grade	53.2	53.5	46.3	42.9	4.4	3.7
Good grade	55.0	54.0	49.8	34.0	3.4	1.8

Source:—Census of Agriculture.

of land use adjustments have long been advocated as a desirable shift from a one-crop type of agricultural economy and also from the standpoint of good conservation practice.

Size of Farm.—In terms of total occupied area, farms on the poorest grade of land are considerably larger than on other grades of land but slightly smaller as far as the improved land area is concerned. Conversely, more unimproved land is found on the poorer grades of land and thus is available for livestock grazing. (Table 4).

Associated with the decrease in the number of farms largely through a consolidation process, there has been a pronounced increase in the average size of farm. If reliance can be placed on the above data for the selected municipal units it can be concluded that farms on the poor and good grades of land have made the most progress in this respect. During 1951-1961 ten-year-period, farms on poor land increased about one-fifth to one-quarter in size as compared with one-quarter to one-third for farms on good land and one-tenth to one-eighth on medium grades of land.

Table 4.—Average Utilization of Land for Rural Municipalities Representative of Poor, Medium and Good Grades of Land, 1951 and 1961

	Total farm land		Total improved land		Area under crops		Wheat		Improved pasture and tame hay	
	1951	1961	1951	1961	1951	1961	1951	1961	1951	1961
	—acres per farm—									
Brown soil zone										
Poor grade	1,244	1,505	438	524	318	318	165	152	48	67
Medium grade	599	665	491	560	275	297	232	253	10	12
Good grade	749	929	571	695	360	388	311	296	16	15
Dark Brown soil zone										
Poor grade	816	1,003	464	595	325	347	181	192	46	79
Medium grade	672	763	497	611	264	327	230	262	25	23
Good grade	609	803	572	759	315	410	285	258	24	14

Source:—Census of Agriculture.

These changes, in conjunction with modifications in enterprise selection, increased use of credit and better management practices indicate progress toward the attainment of more economic farm units on all grades of land.

Livestock on Farms.—Other changes in the area of farm organization and management have to do with the livestock enterprise. A comparison of livestock numbers on farms in 1951 and 1961 shows relatively large increases in cattle, mainly beef type, and a slight increase in the hog population. In the Brown soil zone, total cattle per farm on the poor grade of land averaged 91 in 1961 as compared with 35 in 1951. In the case of municipal units with medium and good grades of land in this soil zone, 1961 numbers were 19 and 26 as compared with 8 and 9, respectively, in 1951.

Similar, though probably less pronounced, increases took place in the Dark Brown soil zone. However, in all the selected municipal units, cattle numbers doubled from 1951 to 1961.

The expansion in cattle numbers has been abetted and supported by the extension and development of PFRA and provincial community-type pastures as well as the internal farm land use and organizational adjustments aforementioned. All these adjustments indicate a more appropriate use of lands normally considered to be submarginal for wheat and other grain crop use.

Economic Classification of Farms.—Commercial farms, defined in the Census of Agriculture as having a total annual value of agricultural products sold of $1,200 or more, predominate in this area, as throughout Saskatchewan. All census farms were categorized on the basis of three criteria, i.e., total annual value of agricultural products sold, number of days the farm operator worked off the farm at either agricultural or non-agricultural work, and the relationship of the value of agricultural products sold to income received by the operator and his family from all other sources, excluding income from other investments. (Table 5).

Table 5.—Distribution of Farms, Classified by Economic Class for Rural Municipalities representative of Poor, Medium and Good Grades of Land, Saskatchewan, 1960

	Brown soil zone			Dark Brown soil zone		
	Rural municipal number					
	110 (Poor)	135 (Medium)	228 (Good)	315 (Poor)	282 (Medium)	287 (Good)
	—per cent—					
Commercial farms	92.9	95.6	97.7	90.4	95.7	96.6
Total value of products sold of 25,000 and over	3.6	—	1.9	0.5	0.7	2.9
15,000–24,999	4.3	1.0	8.2	2.1	3.4	11.4
10,000–14,999	14.3	9.8	20.4	9.7	13.6	21.3
5,000–9,999	34.3	43.2	40.1	29.6	35.6	39.7
3,750–4,999	12.1	13.3	9.9	18.4	11.9	6.6
2,500–3,749	15.7	18.1	9.0	15.3	14.2	6.1
1,200–2,499	8.6	10.2	8.2	14.8	16.3	6.6
Other farms, total	7.1	4.6	2.3	9.6	4.3	3.4
Part-time	0.7	1.3	0.4	1.0	—	1.1
Other small scale	4.3	2.8	0.6	5.6	2.7	1.5
Residential and institutional	2.1	0.3	1.3	3.0	1.6	0.8

Source:—1961 Census of Agriculture.

While there are a number of commercial farms in the relatively low income categories, it might be pointed out that only on one grade of land (poor grade in the Dark Brown soil zone) were there less than half of the commercial farms with gross farm incomes of $5,000 or more. The average annual gross farm income in 1960, as reported in the census, was $7,328, $5,810 and $8,720 for the representative municipal units in the Brown soil zone for poor, medium and good grades of land compared with $5,456, $6,195 and $9,228 for the respective municipal units and grade of land in the Dark Brown soil zone. The average annual gross farm income on the poorest lands ($6,236) approximated the level on medium grade lands ($5,996) in 1960 and exceeds the average for the province of Saskatchewan ($4,925). Since these data pertain to a relatively normal crop year, and since the price factor is constant for all grades of land, the income relationship shown may be assumed as typical. Other information presented elsewhere, in this article, indicates the growing diversity of income sources other than wheat, especially on the poorest grades of land. This has helped to improve its income position relative to other grades of land.

Type of Farm.—Further evidence of the diversification of farm income is shown in Table 6 for commercial farms in the representative municipal units. These farms are classified in the 1961 Census according to the predominant source or kind of farm income.

These data show the extent of adjustment in farm type and sources of income which have taken place during the last decade in these areas, which usually have been looked on as following a one-crop wheat economy. For instance, nearly one half of all commercial farms in the representative poor land municipal unit of the Brown soil zone were classified as cattle farms in

Table 6.—Commercial Farms Classified by Type, Representative Municipal Units, Saskatchewan, 1961

	Brown soil zone			Dark Brown soil zone		
	Rural municipal number					
	110 (Poor)	135 (Medium)	228 (Good)	315 (Poor)	282 (Medium)	287 (Good)
	—per cent—					
All commercial farms	100.0	100.0	100.0	100.0	100.0	100.0
Dairy	—	—	0.2	—	0.4	—
Cattle, hogs, sheep (excl. dairy)	46.9	1.3	6.0	14.7	3.9	1.1
Poultry	—	0.3	—	1.7	0.4	—
Wheat	30.8	95.1	86.4	58.1	88.6	73.7
Small grains (excl. wheat)	10.0	2.4	6.6	13.0	3.5	24.0
Other field crops	—	—	—	—	—	—
Fruit and vegetables	—	—	—	—	—	—
Forestry	—	—	—	—	—	—
Miscellaneous specialty	—	—	—	—	—	0.4
Mixed	12.3	0.9	0.8	12.5	3.2	0.8
Livestock combination	2.3	0.3	—	7.9	1.1	0.4
Fieldcrops combination	4.6	0.3	0.4	2.3	—	0.4
Other combinations	5.4	0.3	0.4	2.3	2.1	—
Number of commercial farms	130	301	455	177	282	263

Source:—1961 Census of Agriculture.

1961. Only one-third of the farms here were classified as wheat farms compared with 58 per cent in the poor land municipal unit of the Dark Brown soil zone and over 75 per cent in all other groups. The relatively large proportion of farms classified as mixed combinations in the poor land areas also indicates that adjustment from a dependence of income on a single crop has progressed a great deal.

Tenure.—Private ownership of land is a main objective of most farmers in this region. It is usual also to find the farm operator and his family operating owned lands and in many cases a few additional rented parcels. The latter group, classed as part owner-part renter, is most prevalent on the poorer grade of land. The practice of renting additional land is a common method used to enlarge the size of farm, increase the volume of business and income and restrict the capital investment in land. This trend increased during the 1951 to 1961 decade. Outside this grade of land, farm owner operators are the most common form of tenure.

Off-Farm Employment.—Only very sketchy information is available to show the extent of off-farm work of the operator as an alternative source of income. The 1961 census of agriculture gives an indication of this feature in terms of number of days. The average number of days was 11.8, 25.1 and 18.4 for farmers in the poor, medium grades of land, respectively, in the Brown soil zone. In the Dark Brown soil zone the respective number of days were 16.6, 14.6 and 18.5.

These data suggest that off-farm work is not an important source of income in this general area and is restricted by the unavailability or lack of service and industrial employment opportunities in rural areas and nearby urban centres. It, of course, is also restricted by farm labor requirements according to the type of farm and locational or distance factors associated with commuting between the farm and the job opportunity. Some information from the farm organization studies of the Economics Division shows that off-farm employment is most prevalent among the operators of small sized farms. Between one-quarter and one-half of the operators of half-section (320 acres) farms on poor and medium grades of land have off-farm employment.

Age of Farm Operator.—It is often assumed that farmers on the poorer grades of land are older than those on the superior grades. An examination of data from the 1961 Census of Agriculture for the selected municipal units does not confirm this belief. Little difference is noted in the distribution of farmers by age groups. If any, there is a slight tendency for those on the good grades to be older than those on poor and medium grades.

These data also suggest little bias toward young men in poor land areas entering into farming as compared with superior land areas. The proportion of farmers in the younger age groups (up to 35 years) was higher and those in the older age groups (60 years and over) was lower in the Brown soil zone than in the Dark Brown soil zone. Moreover, there was little difference in these proportions between grades of land in each soil zone.

Residence of Farm Operators.—Information assembled in the changes in farm organization studies shows the predominance of time the operator and family lived in the residence on the farm, in a town residence or divided as between a farm and town residence. A greater proportion of farmers on good grades of land live in town during all or part of the year than those on poor or medium grades of land. Even, on poor land, however, about one-fifth of farm operators and their families live in town during all or part of the year. Operators of small size farms (about one half of sample) live in town and thus are in a position to pick up other types of employment, most of which are of a service type.

Income Comparisons on Different Grades of Land.—A wealth of recent information with respect to farm organization, investment and returns is available from the series of annual farm organization studies conducted since 1954 on representative grades of land of the prairie area. These data reveal relatively satisfactory returns to the average operator and family for labor and capital after deductions are made for cash operating expenses and depreciation on real estate, machinery and equipment.

The business records pertain to the year of study and since crop yields fluctuate widely in the area, adjustments were made to confirm to an average situation on the basis of average yields in the 1951-1962 period. Operators of half section grain farms on medium and good grades of land in the Brown soil zone with capital investments of $17,483 and $19,756 show return to labor and capital of $2,593 and $4,407, respectively. This compares with $1,838 and $3,089 for comparable farms on similar grades of land in the Dark Brown soil zone with capital investments of $13,977 and $24,573. Operators of section grain farms on poor, medium and good grades of land in the Brown soil zone with capital investments of $27,054, $29,902 and $42,063 had average returns of $3,484, $5,115 and $7,874; whereas the comparable farms in the Dark Brown soil zone with capital investments of $31,217, $31,728 and $52,070, had average returns of $2,342, $3,727 and $6,137. Large grain farms with about two sections of land in the Brown soil zone with capital investments of $41,765, $57,768 and $82,818 on poor, medium and good grades of land had average returns of $5,336, $10,474 and $18,348; while the comparable farms on the Dark Brown soil zone with capital investments of $48,482, $52,604 and $84,278 had average returns of $5,616, $6,801 and $10,364. These data reveal a relatively favorable level of returns for grain farms and indicate a reasonable degree of adjustment in land use, farm organization and capital use toward the attainment of economic farm units.

A favorable income position is also shown for the grain-cattle farms. Information is available only for medium and large size farms on poor land medium grades of land. Grain-cattle farms in the Brown soil zone of medium size on poor and medium grades of land with capital investments of $32,892 and $43,245 had average returns to labor and capital of $4,428 and $3,194 whereas the respective farms in the Dark Brown soil zone with capital investments of $38,831 and $35,562 had average returns of $2,489 and $6,388.

Livestock investment as a proportion of total investment was about 21 per cent on medium size farms on poor grade of land in the Brown soil zone and about 14 per cent on all other grades. This relationship also prevailed for large size grain-cattle farms. Here average annual returns were $6,783 and $5,717 on poor and medium grades of land in the Brown soil zone with total capital investments of $56,342 and $67,066. Similar good returns of $5,100 and $10,928 were made for comparable size farms with $57,633 and $59,675 capital investments, respectively, in the Dark Brown soil zone.

On the basis of the sample and the various indicators used in this study to portray and measure the degree of adjustments in farming in agriculture in the Prairie Area of Saskatchewan, one might reasonably conclude there has been a considerable degree of success in recent years toward the goals of production stability, financial security and a desirable level of living.

THE PATTERN OF FARM CHANGES IN THE DAVIDSON AREA OF SASKATCHEWAN

J. K. Wiens

A "Changes in Farm Organization Study" on Weyburn Loam soils in the Davidson area of Saskatchewan was carried out in 1954, 1959, and will be continued in 1964. As a farm sampling basis for these studies, a reconnaissance survey was made of all farmers within the boundaries of the study area. Information was collected on type of farm organization, basic pattern of land use, arable acres, livestock numbers, off-farm employment and age of farmer. The reconnaissance survey for the 1959 study was made in 1959, and for the 1964 study in 1963.

The study area includes 23 townships in the vicinity of Davidson. Six of the 23 townships are in the R.M. of Craik No. 222, six in the R.M. of Arm River No. 252, six in the R.M. of Willner No. 253, and five in the R.M. of McCraney No. 282. The principal towns in the area are Craik, Davidson and Kenaston. The soils are predominantly Weyburn Loan soils. The Weyburn Association consists of medium textured soils developed on undifferential boulder clay deposits. All but the roughest land in the area is cultivated. The soil is moderately productive. The long-time annual average wheat yield per seeded acre[1] for the 1920-1963 period was 12.5 bushels an acre and by decades 1920 to 1929, 13.7; 1930 to 1939, 6.6; 1940 to 1949, 11.8; and 1950 to 1959, 16.6; and 1960 to 1963, 15.9.

Farm Size.—The trend toward fewer and larger farms is continuing. Farm numbers decreased by two per cent a year over the four-year period (Table 1).

Table 1.—Changes in Farm Numbers and Farm Size in 23 Townships, Davidson Area, 1959 to 1963

Farm size	1959	1963	Change
—quarters—	—number—		—per cent—
1	9	13	44
2	72	50	−31
3	88	60	−32
4	126	92	−27
5 and 6	140	144	3
7, 8, and 9	92	112	22
10 and 13	36	41	14
14 to 17	9	10	11
18 and over	8	12	50
Total	580	534	− 8

The big decrease in numbers was for the two, three, and four quarter section farm units. The number of farms with five and six quarter sections remained about constant. This farm unit "consolidation" resulted in an increase in the number of farm units with seven or more quarter sections. There was also an increase in the number of one quarter section units. The latter would suggest that despite the trend to larger farms a residual number of small farm units in the Prairie area (one, two and three quarter sections) can be expected;

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[1] For all four Rural Municipalities, as reported by the Provincial Secretary of Statistics.

many of these unit operators will be semi-retired farmers, farmers with off-farm employment, etc.

Age of Operator.—There was a notable change in the age distribution in the four-year period under study (Table 2). The young farmer group (under 34 years of age) represented 19 per cent of the farmers in 1959, and 15 per cent in 1963. The 50 to 64 age group increased in relative importance—from 27 to 32 per cent. Thus, the change in age distribution indicates that the decrease in farm numbers is not only the result of retiring farmers not being replaced by an equal number of young starting farmers but is also the result of an exodus of young farmers. There was a decrease of 31 farmers or 28 per cent of those under 34 years of age. There was an absolute decrease in farmers between the ages 35 to 49 years of 23 farmers, or nine per cent but an increase in the number of farmers in the 50 to 64-age group of 11 farmers, or seven per cent.

Table 2.—Changes in Age Distribution of Farmers in 23 Townships, Davidson Area, 1959 to 1963

Age (years)	1959		1963		Per cent change	Saskatchewan 1961
	No.	Per cent	No.	Per cent		
Less than 34	111	19	80	15	−28	19
35 to 49	245	42	222	41	− 9	39
50 to 64	158	27	169	32	7	31
65 and over	66	12	63	12	− 5	11
Total	580	100	534	100		100

This change takes on more significance when one subsorts the above groups by size of farm (Table 3).

Table 3 subdivides size of farm groups by age of farm operator. As in Table 1, the reader must keep in mind that the intervals of farm size are not equal. The modal farm size group for the farmers under 34 years of age increased from four quarters in 1959 to six quarters (20 per cent of these farmers operated a six-quarter section farm) in 1963. The modal size group

Table 3.—Age of Farm Operator and Farm Size, Davidson Area, 1959 to 1963

Size of farm	1959				1963			
	Age of operator (years)				Age of operator (years)			
	Less than 34	35–49	50–64	65 and over	Less than 34	35–49	50–64	65 and over
1	0.9	—	2.0	6.3	—	1.8	3.6	4.8
2	13.1	7.6	16.3	23.4	6.3	5.9	10.1	23.9
3	21.5	12.7	18.3	6.2	12.5	10.8	9.5	15.9
4	29.0	21.1	16.3	25.0	17.5	15.3	18.8	19.0
5, 6	23.4	26.2	23.5	15.6	35.0	28.4	24.3	19.0
7, 8, 9	11.2	20.2	13.1	12.5	17.5	25.2	20.7	11.1
10, 11, 12, 13	0.9	7.6	7.2	9.4	8.8	5.9	10.1	6.3
14, 15, 16, 17	—	2.5	2.6	—	1.2	2.7	1.7	—
18 and over	—	2.1	0.7	1.6	1.2	4.0	1.2	—
Average size (Quarter section)	4.2	6.1	5.5	4.8	6.1	6.7	6.1	4.3

for farmers in the 35 to 49 age group remained the same (five and six quarter sections in size) but the average size of farm increased from 6.1 quarter sections per farm to 6.7 quarter sections per farm. The modal size group for the farmers in the 50 to 54 age group was also five and six quarter sections in size for both 1959 and 1963, but in this case the average size of farm increased from 5.5 to 6.1 quarter sections per farm. The size distribution of farms for farmers over 65 years of age was bimodal at two and four quarter sections in size but for this age group the trend was to a smaller size of farm. The average size decreased from 4.8 to 4.3 quarter sections per farm.

The reduction in the number of farmers has taken place in the group of farm operators below 50 years of age and mainly in the group of farmers less than 34 years old. However, farmers in the young age group who have started or continued farming in the last four years are, on the average, operating much larger farm units (6.1 quarter sections in 1963 as compared with 4.2 in 1959), while the number of older farmers has increased and this group is on the average operating smaller units.

Land Tenure and Ownership.—The proportion of partly-owned and partly-rented farms in 1959 and 1963 remained about the same, at 42 per cent. Fully-owned units increased, by five, to 47 per cent of all farms.

Table 4 provides a summary description of land ownership. Complete data for the three years 1954, 1959, and 1963 were available only for part of the study area. The data show that most of the land is privately owned—over 90 per cent—and that most of it by local residents. It can also be seen that there has been no marked shift in the types of land ownership.

Land Use.—Only shifts in land use of a more permanent nature will be noted. The percentage of improved land increased by two per cent to 86 per cent. This increase occurred for all but one of the size groups of farms. The increase is not large but is notable when one considers that it was assumed that all arable acres were already being cultivated. The tame hay and pasture acreage increased by 63 per cent to 10,692 acres, or an average of 19.3 acres per farm.

Table 4.—Land Ownership for Study Area in R.Ms. 222 and 253 for 1954, 1959, and 1963, and all of the Study Area for 1963

Year	R.Ms. 222 and 253			Study area
	1954	1959	1963	
Privately owned by:				
Local residents	80.7	78.5	79.5	79.7
Provincial residents outside of area	3.2	3.8	3.5	3.6
Residents of other provinces	2.9	2.9	2.6	2.7
Residents of other countries	2.7	2.5	2.2	2.5
Estates	2.8	3.6	3.2	3.5
Total, privately owned	92.3	91.3	91.0	92.0
Mortgage companies	2.1	3.2	3.3	3.3
Crown[a]	5.5	5.4	5.6	4.3
Townsites	0.1	0.1	0.1	0.4
Total	100.0	100.0	100.0	100.0

[a] Including R.Ms.

Livestock Enterprise.—The average number of cattle per farm increased from 16.9 in 1959 to 20.0 in 1963. However, the increase in the cattle population for the area was only nine per cent. The average number of cows per farm increased by 11 per cent to 8.4 cows per farm and the total cow population by less than two per cent. Thus, the increase in cattle numbers was due to a slight expansion in the basic herd but mainly to a lengthening of the cattle production period.

There was a strong correlation between size of farm and size of cattle enterprise and this relationship strengthened in the four-year period (Table 5), i.e., the large farm operators increased the size of their livestock enterprise more than the small farm operators did.

Table 5.—Changes in Livestock Numbers by Size of Farm in 23 Townships, Davidson Area, 1959 to 1963

	Farm size (Quarter sections)								
	1	2	3	4	5, 6	7, 8, 9	10, 11, 12, 13	14, 15, 16, 17	18 and over
Average number of cattle per farm—1958	1.9	7.8	10.5	11.1	22.7	20.7	24.9	46.3	63.0
—1963	7.0	4.0	13.9	10.5	19.8	25.4	30.4	34.0	86.1
Change	+ 5.1	− 3.8	+ 3.4	− 0.6	− 2.9	+ 4.7	+ 5.5	−12.3	+23.1
Per cent change	268.4	−48.7	32.4	− 5.4	−12.8	22.7	22.1	−26.6	36.7

The hog population decreased by 42 per cent from 1959 to 1963 and averaged only 4.9 hogs for all farms in 1963. Sixty-two per cent of the farms in 1963 had no hogs, 32 per cent from 1 to 19, five per cent from 20 to 59, and only one per cent over 60. Neither the small nor the very large farms had hog enterprises with more than 20 hogs.

Only 1.5 per cent of the farms had some sheep and then only a small flock.

Residence.—Sixty-six per cent of the farmers in 1963 lived on the farm all year, 21 per cent lived in town and 13 per cent resided part of the year on the farm and part of the year in town. By size of farm, a larger proportion of the operators of large farms lived on the farm all or part of the year.

Off-farm Employment.—Twenty-four per cent of the farmers had some income from off-farm employment (15 per cent with minor off-farm employment and nine per cent where this employment competed with farm labor requirements). A slightly higher percentage of small farm operators (farming three-quarter sections or less) had off-farm employment but the striking feature was the high percentage of farmers operating one quarter and two quarter-section units with competing off-farm employment, 38 and 24 per cent respectively. An offsetting factor was that these were the only farm size groups where a significant proportion of the farm operators had all the farm work done on a custome basis, 15 per cent and 10 per cent respectively.

TRACTOR UTILIZATION ON FARMS IN THE PRAIRIE AREA OF SASKATCHEWAN, 1954-1961

K. I. VICK

This article is based on tractor data taken from the questionnaires used in the "Changes in Farm Organization Studies",[1] carried out in Saskatchewan from 1954 to 1961 inclusive. Sample studies were made of farms classed as small, medium and large,[2] located on soils, of low, medium and high productivity in the Dark Brown and Brown soil zones. The soils on which samples were collected and their levels of productivity in the Dark Brown soil zone were: Asquith Light Loam—low; Weyburn Loam—medium; Regina Heavy Clay—high, while for the Brown soil zone they were: Hatton Light Loam—low; Haverhill Loam—medium; and Sceptre Heavy Clay—high.

Numbers of Tractors on Farms.—An inventory of the number of tractors per farm is given in Table 1. The numbers of tractors per farm increased with farm size and averaged 1.1, 1.3, and 1.9 for small, medium and large farms, respectively, in 1961. There is, however, no relation between the number of tractors per farm and soil type. There was an increase in the number of tractors per farm on medium farms after 1957. For large farms the average of 1.9 tractors per farm is not the result of nearly all farms having two tractors but some farms having as many as four tractors. Twenty-nine per cent of the large farms had one tractor, 53 per cent two tractors, 17 per cent three tractors and one per cent four tractors. For the medium farms, 73 per cent had one tractor, 24 per cent had two tractors, and three per cent had three tractors. No small farms had more than two tractors and only eight per cent had two tractors.

Table 1.—Tractors on Farms in the Prairie Area of Saskatchewan by Soil Type and Size of Farm, 1954-1961

Year of study	Soil type	Farm size[a]		
		Small	Medium	Large
		—tractors per farm—		
1954	Weyburn	1.2	1.2	2.1
1954	Regina Heavy Clay	1.0	1.1	2.5
1955	Sceptre Heavy Clay	1.1	1.2	1.9
1956	Haverhill Loam	1.0	1.1	1.8
1957	Asquith Light Loam	1.3	1.4	1.9
1958	Hatton Light Loam	—[b]	1.4	1.8
1959	Weyburn Loam	—[b]	1.4	1.9
1960	Regina Heavy Clay	—[b]	1.3	1.9
1961	Haverhill Loam	1.0	1.4	1.8
	Average	1.1	1.3	1.9

[a] See footnote [2].

[b] No samples of small farms were taken in 1958, 1959, and 1960.

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[1] A continuing study made by the Economics Division to determine changes which occur in farming practices in the Prairie provinces.

[2] The farm size classes used, correspond to those used in the Changes in Farm Organization studies, namely, small farms—240 to 320 cultivated acres; medium farms—480 to 640 cultivated acres; large farms—800 to 1,440 cultivated acres.

The number of tractors on each farm affects the use of each tractor. Where there are two or more tractors, they may not all be used as much one as the other. The little-used tractors are often referred to as 'second tractors'. These 'second tractors' are generally used for choring, some field work, or kept as standby units which can be pressed into service when the main-use tractor needs repair.

Sizes of Tractors.—The sizes[1] of tractors, as evidenced by the statistics in Table 2, are influenced by farm size. The percentages of small tractors is nearly twice as great on small farms as on medium and large farms. Also, the percentages of medium tractors are greater on small than on medium and large farms. Medium tractors make up the largest percentage of tractors for all farm sizes. Only three per cent of the tractors on small farms were classed as large while corresponding percentages for medium and large farms were 18 and 22 per cent respectively. As farm size increases fewer medium tractors are used but more large tractors are used.

Tractor Fuel Use.—Diesel tractors were exclusively medium and large tractors and were used solely on medium and large farms. Twelve per cent of the tractors on medium and 30 per cent on large farms were diesel tractors. On the medium farms, nine per cent of all tractors were medium diesels and three per cent were large diesels. On large farms, 21 per cent of the tractors were medium diesels and nine per cent were large diesels.[2]

Tractor Purchases.—On medium and large farms more small tractors were purchased used than new. This may be because many of the small tractors on these farms are purchased as 'second tractors'. As farms increase in size more tractors are purchased new and these tractors are generally medium and large tractors. In addition, there is some indication that the larger the farm the newer the used tractor purchased.

Tractor Ages at Date of Enumeration.—The age distribution of tractors on each farm size class at the date of enumeration is shown in Table 2. These percentages suggest there is a more rapid replacement of tractors as farms become larger. This is evidenced by the large proportion of tractors which are five years of age or less on medium and large farms. 'Second' tractors on large and medium farms may obscure this relationship.

Tractor Use.—Table 2 shows on small farms, no tractors were used more than 600 hours a year and on medium farms only four per cent of the tractors exceeded 600 hours of annual use. Fourteen per cent of the tractors on large farms were used more than 600 hours annually but only two per cent of the tractors on large farms were used 800 or more hours a year. These statistics show the annual hours of use per tractor increases with increasing farm size.

There are essentially three determinants of the annual hours of tractor use per farm. These are (1) the numbers of acres of fields which tractors operate on annually, (2) the amount of tractor use in operating a livestock enterprise or enterprises, and (3) the size of tractors and their machine complement.

None of the farms sampled made extensive use of tractors in livestock operations. The average annual hours of tractor use per farm by record year and soil type are presented in Table 3. As expected the average annual hours of

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[1] Tractors were classified according to their maximum drawbar horsepower ratings as given in the Nebraska Test Reports. The tractor size classes established were: small tractors—10 to 29 max. dbhp; medium tractors—30 to 49 max. dbhp; large tractors—50 or more max. dbhp.

[2] *Note:* In the last three years (1961, 1962, 1963) there has been marked increases in the numbers of diesel tractors purchased in Saskatchewan, so the situation as described may no longer be the same. See, Canadian Farm Implements, March 1962, January 1963, and February 1964.

Table 2.—Tractor Statistics Computed from Sample Data Collected on Farms Classified as Small, Medium and Large in the Prairie Area of Saskatchewan, 1954-1961

	Farm size		
	Small	Medium	Large
Sizes of tractors on farms:			
Percentages of tractors—			
Small	22	12	13
Medium	75	70	65
Large	3	18	22
Total	100	100	100
Tractor purchases:			
Percentages of tractors purchased New—			
Small	10	3	3
Medium	27	43	43
Large	1	9	15
Sub-total	38	55	61
Used—			
Small	12	9	10
Medium	48	27	22
Large	2	9	7
Sub-total	62	45	39
Total	100	100	100
Tractor ages at date of purchase:			
Percentage of tractors in each specified age class—			
New	38	55	61
1–5 years of age	26	20	18
6–10 years of age	24	16	13
11–15 years of age	8	7	5
16 plus years of age	4	2	3
Total	100	100	100
Tractor ages at date of enumeration:			
Percentages of tractors in each specified class—			
New	0	4	6
1–5 years of age	27	33	38
6–10 years of age	32	35	32
11–15 years of age	28	18	15
16 plus years of age	13	10	9
Total	100	100	100
Tractor use:			
Percentage of tractors operated—			
0–199 hrs annually	25	22	26
200–399 hrs annually	70	42	32
400–599 hrs annually	5	32	28
600–799 hrs annually	—	4	12
800 plus hrs annually	—	—	2
Total	100	100	100

Table 3.—Average Annual Hours of Tractor Use Per Farm in the Prairie Area of Saskatchewan, 1954-1961

Farm size	Survey years and soil type									
	1954 Weyburn Loam	1954 Regina Heavy Clay	1955 Sceptre Heavy Clay	1956 Haver-hill Loam	1957 Asquith Light Loam	1958 Hatton Light Loam	1959 Weyburn Loam	1960 Regina Heavy Clay	1961 Haver-hill Loam	Average all farms, 1954–1961
Small	316	238	231	313	285	—	—	—	255	273
Medium	358	361	371	454	412	427	512	490	413	422
Large	736	695	609	637	702	636	779	712	568	675

Table 4.—Percentages of Gasoline and Diesel Tractors on Medium and Large Farms in the Prairie Area of Saskatchewan, 1954-1961

Farm size	Survey years and soil type								
	1954 Weyburn Loam	1954 Regina Heavy Clay	1955 Sceptre Heavy Clay	1956 Haverhill Loam	1957 Asquith Light Loam	1958 Hatton Light Loam	1959 Weyburn Loam	1960 Regina Heavy Clay	1961 Haverhill Loam
	—per cent—								
Medium farms									
Tractor									
Gasoline	100	100	93	93	89	92	88	54	76
Diesel	0	0	7	7	11	8	12	46	24
Total	100	100	100	100	100	100	100	100	100
Large farms									
Tractor									
Gasoline	83	64	78	67	67	74	70	56	65
Diesel	17	36	22	33	33	26	30	44	35
Total	100	100	100	100	100	100	100	100	100

tractor use increased as farm size increased. These figures do not, however, show any conclusive evidence that soil type has any effect on the annual hours of tractor use on farms. The numbers of tractors on farms may reduce the numbers of hours any particular tractor or tractors are used but the over-all annual hours of tractor use for farms remains relatively constant.

In summary, farm size has some influence on numbers, sizes, types as to fuel use, ages and hours of tractor use on the various sizes of farms.

Table 5.—Percentage of Tractors, Small, Medium and Large on Small, Medium and Large Farms in the Prairie Area of Saskatchewan, 1954-1961

Farm size	Survey years and soil type								
	1954 Weyburn Loam	1954 Regina Heavy Clay	1955 Sceptre Heavy Clay	1956 Haverhill Loam	1957 Asquith Light Loam	1958 Hatton Light Loam	1959 Weyburn Loam	1960 Regina Heavy Clay	1961 Haverhill Loam
	—per cent—								
Small Farms									
Tractors:									
Small	47	15	17	27	19	—	—	—	10
Medium	53	85	78	73	81	—	—	—	80
Large	—	—	5	—	—	—	—	—	10
Total	100	100	100	100	100	—	—	—	100
Medium farms									
Tractors:									
Small	20	20	10	11	8	12	12	6	21
Medium	65	75	77	89	75	65	71	69	58
Large	15	25	13	—	17	23	17	25	21
Total	100	100	100	100	100	100	100	100	100
Large farms									
Tractors:									
Small	14	10	8	11	13	14	11	16	16
Medium	61	66	75	79	74	64	53	42	63
Large	25	24	17	10	13	22	36	42	21
Total	100	100	100	100	100	100	100	100	100

There is nothing in the data to show that soil type had an influence on the number of tractors per farm or the ages of the tractors. Fuel use, by tractors, however, does seem to be influenced by soil type. Table 4 shows more diesel tractors on the high productivity soils, particularly on large farms in the Dark Brown soil zone (Regina Heavy Clay). This table also indicates the trend for more diesel tractors on both medium and large farms. In Table 5, where farm size and tractor size are related to soil type, one can see that soil type has some influence on tractor size. Both medium and large farms located on the higher productivity soils have large percentages of large tractors. This implies that in time there will be more used large tractors on the market and thus it may be expected that there will be more large tractors on small farms.

All the statistics presented in this article seem to show that farm size is the chief detetrminant of the number of hours of tractor use on farms. There are only fragments of evidence, in the statistical data, to suggest that soil types, in the prairie area of Saskatchewan, may exert some effect on the use of farm tractors. The influence of soil type may be overshadowed by the variations in climatic conditions from year to year.

PUBLICATIONS OF THE ECONOMICS DIVISION

Aerial Photo Interpretation of Land Use Changes in Madawaska County, New Brunswick, 1944 to 1961. Philpotts, L. E. Ottawa, 1964. pp. viii×38, and maps and photos.

An interpretation, from aerial photographs, of the consolidation of farm units, acreages taken out of agricultural production, acreages idle or not fully utilized, and the decrease in the number of farms in Madawaska County, New Brunswick, in the 1944-61 period.

Manitoba Farm Land Values, 1958-61. Johnson, L. M. and T. O. Riecken, Winnipeg, Manitoba. February 1964. pp. 38 plus map.

A report which supplies information on prices paid for farm land in Manitoba over the 1956-61 six-year period. Part I analyses price variations, according to regions, quality of the land, additional effects of buildings on value, and types of buyers. Part II gives detailed data on land values for each of the 20 Census Divisions in Manitoba.

Supplement to Handbook of Agricultural Statistics—Trends in Canadian Agriculture. Ottawa. March 1964. pp. 32.

This bulletin, prepared by the Economics Division, from statistics published by the Dominion Bureau of Statistics, "supersedes a supplement published in March 1960 to the Handbook of Agricultural Statistics, Reference Paper No. 25—Part III, Trends in Canadian Agriculture, issued in August 1955 by the Economics Division, in co-operation with the Agriculture Division, D.B.S.".

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

National Grain Policies, 1962. Supplement 4. Prepared in the Grains Section, Grains and Rice Branch, Commodities Division, FAO. Rome. 1962. pp. i×109. Price: $0.50.

This supplement contains an account of recent policy development in 28 countries for which basic statements were published in early 1959 in "National Grain Policies", or in supplements issued in 1959, 1960, and 1961. It also includes comprehensive accounts for 13 countries which had not been covered previously. For each country, the facts reviewed are: I. Measures affecting grain production and marketing—A. Policy objectives and production targets; B. Price support policy; C. Aids to grain production; D. Marketing Organizations. II. Measures affecting grain consumption. III Measures affecting foreign trade in grains.

Farm Development in Japan.—Yang, W. Y., Land Use and Farm Management Branch, Land and Water Development Division, FAO Agricultural Development Paper No. 76. Rome 1962. xiv + 76. Price: US $1.00.

As stated in the Foreword, "The aim of this paper is to examine the most important features of Japanese farm organization and operation, and to show the part played in successful farming by ingenious, skillful planning. This paper also points out the essential factors which must be taken into account in adapting Japanese methods and practices of farm management to other countries.

It will be seen that Japanese farmers do not stop at growing good crops or rearing good animals. Their endeavor is more fundamental. It is to choose the most suitable practices and the most profitable enterprises for the optimum use of land, labor and capital in order to maximize net earnings and family satisfaction."

The author also reminds his readers that "the Japanese achievement is indeed remarkable. To many people in Asia and the Far East, Japan affords an example which other nations can and should follow. Japan is both geographically and technologically close to a number of less developed Asian countries, and this is a powerful reason for seeing the Japanese example as one which it is possible to equal. Moreover, the problems confronting Japan are almost the same as those of various other countries. Among them are the small size of farms, the abundance of labor and the scarcity of capital. It is, therefore, not surprising that in recent years Japanese methods of crop production have aroused widespread interest.

Professional workers, government officials and students from Asian countries go to Japan to study crop-growing methods, in particular those used for rice. In several countries experiments and tests have been conducted to evaluate on the spot the advantages and applicability of the Japanese rice cultivation techniques, and farmers have been encouraged to adopt them. It is, however, too early to judge the effectiveness of such efforts".

The report is organized under five section headings: Bird's eye view of a Japanese farm, Technological progress and production increase, Enterprise combination and income maximization, An interview with a young farmer, and Application in other countries.

Economic Bulletin for Europe. Prepared by the Secretariat of the Economic Commission for Europe. Vol. 15, No. 1, New York. August 1963. pp. 128. Price: US$1.50.

This issue of the Bulletin deals with (*a*) recent changes in Europe's trade under the following headings: Europe's place in world trade, Recent developments in western Europe's trade, The trade of eastern European countries, Trade between eastern and western European countries, and International liquidity and balance-of-payments developments, and (*b*) recent economic developments in Europe, under the headings of: Industrial output and investment activity in eastern Europe and the Soviet Union, The prospects for eastern European and Soviet agriculture, Incomes, prices and consumers' supplies in eastern Europe and the Soviet Union, Demand and output in western Europe, and Policies and prospects in western Europe.

The 97-page text is followed by a Statistical Annex which includes tables on: Trade of western Europe with eastern Europe and the Soviet Union, 1961 to first quarter 1963; Imports of western European countries from eastern Europe and the Soviet Union, by commodity groups, 1961 and 1962; and Exports from western European countries to Eastern Europe and the Soviet Union, by commodity groups, 1961 and 1962.

Monthly Bulletin of Agricultural Economics and Statistics. Vol. 12, No. 9, September 1963; No. 10, October 1963; No. 11, November 1963; No. 12, December 1963; and Vol. 13, No. 1, January 1964. FAO, Rome, Italy.

The September 1963 Bulletin contains the first part of a paper on "International Commodity Arrangements and Policies" by Gerda Blau. Part II, with "Commodity Export Earnings and Economic Growth" as a subtitle, appears in the December 1963 Bulletin. In Part I, the author "considers the scope and limitations of these arrangements "as instruments for promoting economic stability and growth, particularly from the point of view of the less developed countries". In her concluding section, dealing with the "Need for a concerted attack", the author states that "there are a number of ways in which a genuine effort is likely to produce some useful results. What is needed is a concerted attack on a number of fronts—long-term lending and aid as part of a comprehensive development program; compensatory finance; international agreements for the regulation of production, for co-ordinated planning in the creation of new capacity, and for the provision of guarantees of access to markets; long-term purchase agreements, conditional and unconditional; continuing consultations between governments, both commodity by commodity and in close link with wider discussions on trade, aid, and development planning, including also confrontations of plans of individual countries—all of which should be pursued simultaneously and with vigor".

In the introductory section to Part II Gerda Blau says that "the very process of economic growth and diversification" of the underdeveloped countries "will inevitably continue to depend in large measure, in any case within the course of this decade, on the possibilities of expanding earnings of foreign exchange from these very same traditional exports for which, in many cases, the outlook in major markets, namely those of the high-income developed countries, is indifferent or poor. This is the crucial problem facing the governments of the underdeveloped countries in their economic relations with the rest of the world and in the shaping of their own national development programs". She organizes her discussion of these problems in a systematic manner, dealing first with the continuing dependence of the economies and of the growth prospects of most of the developing countries on levels of exports of primary products, predominantly of agricultural origin. She then centers her attention on some typical commodity problems of the underdeveloped countries, problems which relate to demand, supply and "the probable degree of control over market supplies, which the underdeveloped exporting countries, acting as a group, can hope to attain in their major high-income markets". In the last part of her paper, she discusses some "possible forms of international action". As she aptly says in her comments on the need for improved international programming, "strengthened efforts are required to assist underdeveloped countries in the joint planning and direction of their national programs, so as to provide each of them with full knowledge and understanding of the plans of others and of the market problems in the rest of the world. Such indicative planning should be supplemented, wherever possible, by long-term contracts or other forms of market assurance which would give to each of these countries a sufficiently firm basis for the elaboration of their development programs geared to a definite knowledge of the external conditions with which they will be individually confronted.

The November 1963 Bulletin features an article by M. Kamiya on "Some Aspects of Food Consumption in Japan, with special reference to livestock products". Kamiya draws attention to the rapid economic development of Japan in the last decade, the greatly increased demand for higher quality foods, and the changes in the pattern of agricultural production which have resulted from the strengthened demand and the changes in its structure.

The January 1964 issue of the Bulletin has an article by C. P. G. J. Smit on "Plans for the 1970 World Census of Agriculture". This article is organized under the following section headings: Main phases of the world census preparations, Programming the census, Census promotion, and Technical assistance to countries.

Mr. Smit says that there remains much room for improvement in census promotion and that three types of improvement are being considered for 1970, namely: the appointment of regional census advisers, the preparation of a study on the use of census results in development planning, and a provision for census financing. He has this to say about the use of census results for development planning: "A strong argument for persuading countries to take an agricultural census would—be to show governments how agricultural census results can be used for agricultural development planning. The matter has been discussed in general terms at two seminars on analysis, evaluation and use of census results held in connection with the 1960 census, respectively in Asia and the Far East and in Africa. Much more can be achieved if the use of agricultural census is demonstrated in a more concrete form. This might be done by preparing a study showing for some selected countries at different stages of development how the agricultural census results have actually been used in their development planning. The study could be used also in training centers on agricultural censuses and seminars on the use of census results."

Monthly Bulletin of Agricultural Economics and Statistics. Volume 13, No. 1, January 1964. Food and Agriculture Organization of the United Nations, Rome, Italy.

The feature Article deals with Plans for the 1970 World Census of Agriculture. The Commodity Notes include Quarterly Notes on Commodity Markets, Rice Bran: Utilization and trade, and The U.S.S.R.'s Trade in Agricultural Commodities in 1962. The latter Note indicates that "as is normal for a highly industrialized country, the share of products of agricultural origin in total trade continued its long-term downward trend. . . However, while for imports this was a reflection of a fall of some 80 million rubles, or about 8 per cent, in the value of imports of agricultural origin, the value of exports of such goods showed an absolute increase of virtually the same value, and reached a record level for the postwar period, over 7 per cent above that of the previous year. . . The U.S.S.R.'s total trade with Mainland China decreased further in 1962, although the latter's net favorable balance of trade improved by some 90 million rubles as a consequence of further drastic cuts of about one third in its total exports to the U.S.S.R. . . In market contrast to the situation this year . . . Soviet grain shipments in 1962, at over 7.8 million tons, reached their highest level in the eight years since detailed annual postwar trade statistics have been published".

Monthly Bulletin of Agricultural Economics and Statistics. Volume 13, No. 2, February 1964. Food and Agriculture Organization of the United Nations, Rome, Italy.

The feature article, Agriculture in Economic Development, considers five main aspects of agriculture's contribution to economic progress: Agriculture's responsibility for the supply of food and raw materials, Agriculture as an earner of foreign exchange, Agriculture as a base for industrialization, Agriculture as a source of capital, and Agriculture as a source of manpower. The article ends with a subsection on Interdependence of agricultural and industrial development, which describes this interdependence under the following subheadings: Agriculture's contribution to industrialization: expanding the effective demand for industrial products, Ways in which industrial development stimulates agriculture: expanding the effective demand for farm products, Absorbing rural labor, Industrial infrastructure benefits agriculture, and The Planning of development.

The Commodity Note deals with Tobacco: Recent Developments in Production and Trade.

OTHER PUBLICATION

Background Studies for Resource Development in the Tweed Forest District, Ontario.

Study No. 1—Hills, G. A. Land and Water Resources, pp. iv+54, incl. maps.

Study No. 2—MacGregor, M. A. and W. M. Braithwaite. Sources and Levels of Income of Open-country Residents. pp. iii+12.

Study No. 3—Scott, H. K. and S. W. Garland. Industrial Development Survey, pp. vii+30.

Study No. 4—Scott, H. K. and J. G. Lussier. Plans and Attitudes of High School Students. pp. v+44.

Study No. 5—MacGregor, M. A. and W. M. Braithwaite. Some Economic Aspects of Recreational Resource Uses (Expenditures of Cottagers and Campers in the Tweed Forest District). pp. iii+9.

Study No. 6—de Vos, A. and A. S. Holder. Fish and Wildlife Base of Recreational Resources. pp. iv+20.

Study No. 7—Abell, H. C. Some Characteristics of Low Income People. pp. 5+19.

Study No. 8—Philpotts, L. E. Aerial Photo Interpretation of Land Use Changes. pp. viii+31, and maps.

Co-operating Agencies:

(*a*) Department of Agricultural Economics, Ontario Agricultural College.
(*b*) Department of Extension Education, Ontario Agricultural College.
(*c*) Department of Zoology, Ontario Agricultural College.
(*d*) Economics Division, Canada Department of Agriculture.
(*e*) Research Branch, Ontario Department of Lands and Forests.

Published by the Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario.

These studies were initiated in 1961 to ascertain the physical, biological, economic, and social characteristics of the Tweed Forest District. The chief purpose of the over-all research project was to collect information needed, at the level of a rural community and of its organizations, in the formulation of action programs under the Agricultural Rehabilitation and Development Act for the development of a small region. An "action program was not intended as an integral part of the project" but "the reports were prepared with the intention that they would be widely circulated for reference and study by interested parties in the Twin Forest District and other areas where similar conditions prevailed".

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

S. C. HUDSON, Director-General

JUNE 1964 **Vol. XXXIV No. 3**

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Published by Authority of the Honourable Harry W. Hays
Minister of Agriculture

INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935–39=100							1949=100		
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937..........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945..........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953..........	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955..........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956..........	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957..........	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958..........	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959..........	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960..........	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961..........	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962..........	240.0	240.8	195.5	286.0	271.9	290.7	234.9	130.7	126.2	186.1
1963..........	244.6	229.9	184.4	275.4	259.3	298.6	237.4	133.0	130.3	196.2
1963										
Jan...........	243.0	239.6	195.8	283.3	269.8	293.0	237.4	132.0	129.0	190.2
Feb...........	242.8	236.7	199.6	273.8	268.6	....	....	132.1	129.4	191.3
Mar...........	242.4	234.7	200.5	268.8	265.8	....	....	132.1	128.9	193.5
April.........	242.8	231.6	196.6	266.6	262.2	301.0	238.1	132.3	128.9	192.9
May.........	244.4	234.5	197.1	271.9	263.4	....	....	132.3	128.3	194.7
June..........	245.7	240.1	200.1	280.1	268.8	....	....	132.8	129.7	195.1
July..........	246.2	242.3	198.6	286.1	271.8	....	....	133.5	132.5	191.9
August.......	244.7	227.6	169.6	285.6	251.7	301.9	236.8	133.9	133.2	194.9
Sept..........	245.0	224.5	163.9	285.2	252.1	....	....	133.4	131.3	198.1
Oct...........	245.9	216.7	163.3	270.1	247.3	....	....	133.6	130.4	200.2
Nov..........	246.7	216.5	163.1	269.8	245.0	....	....	134.0	130.8	203.5
Dec..........	245.3	213.9	164.7	263.1	244.5	....	....	134.2	131.4	207.7
1964										
Jan...........	246.9	215.8	167.3	264.2	244.0	299.4	242.2	134.2	131.4	210.8
Feb..........	246.1	215.9	165.6	266.2	245.1	....	....	134.5	131.3	212.3
Mar..........	245.6	215.1	164.7	265.6	245.5	....	....	134.6	131.3	210.2
April.........	245.6	215.4	165.7	265.0	245.8	309.9	244.1	135.0	131.8	215.1
May.........	245.9	219.1	170.8	267.4	247.5	....	....	135.0	131.2	....
June.........	245.4	227.2	180.7	273.8	253.6	....	....	135.3	132.5	....
July..........	244.9	223.7	179.1	268.3	252.1	....	....	136.2	135.4	....

Note:—See earlier editions for index numbers previous to 1926.
Source:—Dominion Bureau of Statistics, Ottawa.
(a) 1964 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

Gross National Product.—Canada's G.N.P. reached $45.5 billion, at seasonally adjusted annual rates, in the first quarter of 1964, and exceeded by nearly three per cent the total for the preceding quarter. The G.N.P., excluding accrued net farm income, rose by over four per cent. In adjusting rates seasonally, the Dominion Bureau of Statistics assumed an average crop in 1964 in contrast to the record crop harvested in 1963; this assumption accounts for a $300 million drop in the value of crop production. For the G.N.P. as a whole, prices had risen slightly but the greater part of the gain represented a national production increment.

The gain in nonfarm G.N.P. is the twelfth successive quarterly gain and is by far the largest one recorded during the course of the current expansion. The main impetus came from fixed investment which, in turn, was accelerated, partly, by two special factors: the federal government's program of winter housebuilding incentives, and the spending in advance of the scheduled rise, on April 1, in sales taxes on certain classes of investment goods. The expansionary influences in the investment sector were greatly strengthened by gains in the consumer sector which, in this first quarter of 1964, were the largest since the first quarter of 1959. Consumer spending, however, did not rise as much as income available for spending.

Balance of Payments.—The first quarter of 1964 witnessed a rise in the deficit in Canada's current transactions in goods and services with other countries. Part of this rise comes from irregular or non-recurring transactions and from the timing of adjustments in the trade of Canada series, which all had an enlarging effect on the deficit.

Comparative figures for 1962, 1963 and the first quarter of 1964 are as follows:

—millions of dollars—

	1962	1963	1963	1963	1963	1963	1964
			first	second	third	fourth	first
			—quarters—				
Merchandise trade balance...	+155	+484	+70	+72	+144	+198	+44
Deficit on non-merchandise transaction................	−1,003	−1,005	−308	−261	−130	−306	−385
Current account balance.....	−848	−521	−238	−189	+14	−108	−341
Capital movements (a)......	+1,004	+667	+304	+300	−73	+136	+299
Long-term forms..........	+672	+584	+373	+200	+34	−23	+58
Short-term forms..........	+332	+83	−69	+100	−107	+159	+241
Change in official exchange holdings (b)...............	+156	+146	+66	+111	−59	+28	−42

[a] Excluding change in official exchange holdings.

[b] Gold, foreign exchange, and net International Monetary Fund position, less special international financial assistance.

Canada's deficit of $341 million, in the first quarter of this year, on transactions with other countries in goods and services was $103 million, or over 40 per cent higher than the imbalance of $238 million in the corresponding period of 1963. Only a quarter of the increase in the imbalance between the opening quarters of 1963 and 1964 was attributed to merchandise trade, where the surplus after adjustment of the components for balance of payments purposes declined from $70 million to $44 million. The deficit on non-merchandise transactions widened by 25 per cent from $308 million to a record level of $385 million.

Adjustments relating to the timing of wheat shipments and military aircraft, for which progress payments had been credited to exports in 1963, dampened the increase in adjusted exports significantly. After adjustment, merchandise exports gained $245 million or more than 16 per cent from $1,482 million to $1,727 million. Imports rose by $271 million, or about 19 per cent, from $1,412 million to $1,683 million in the first quarter of 1964.

Domestic Exports.—Canada's domestic exports in April 1964 were valued at $651.4 million and exceeded by 26.7 per cent the $514.1 million realized in April 1963. The value of domestic exports in the January-April period rose to $2,388.5 million in 1964 from $1,956.0 million in 1963.

Comparative figures for April and for January-April periods, in 1963 and 1964, are as follows:

	April		January-April	
	1963	1964	1963	1964
	—thousand dollars—			
Total domestic exports	**$ 514,144**	**$ 651,362**	**$ 1,955,996**	**$ 2,388,493**
By country				
United States	305,822	359,082	1,147,158	1,285,370
United Kingdom	67,867	95,817	276,189	361,875
Union of Soviet Socialist Republics	180	25,679	585	110,305
Japan	22,495	24,152	86,858	101,029
Germany, Federal Republic	9,074	17,651	38,896	60,726
Australia	8,242	14,447	33,159	40,660
Netherlands	3,659	6,183	20,391	32,733
China, Communist	12,297	9,897	52,614	32,283
Republic of South Africa	7,095	6,238	22,575	23,303
France	4,236	6,518	22,540	22,478

Consumer Prices.—Canada's consumer price index (1949=100) rose to 135.0 in April and in May 1964 from 132.3 in May 1963. Between April and May 1964 decreases in the food, clothing and transportation components of the index offset increases in the housing, health and personal care, recreation and reading, and tobacco and alcohol components.

Dairy Products.—More creamery butter, cheddar cheese, ice cream mix, and skim milk powder but less evaporated whole milk were produced in May 1964 than in May 1963. Monthly totals, in thousands and with figures for 1963 in parentheses, were as follows: creamery butter, 37,226 pounds (36,684); cheddar cheese, 15,078 pounds (14,206); ice cream mix, 2,585 gallons (2,408); evaporated whole milk, 33,935 pounds (34,182); and skim milk powder, 22,551 pounds (19,607).

Production of process cheese from cheddar and other hard or cream cheese base rose to 5.3 million pounds in May 1964 from 5.1 million in May 1963 but declined to 26.4 million pounds in the January-May period of 1964 from 26.7 million pounds in the corresponding period of 1963. End-of-May manufacturers' stocks of process cheese declined to 3.2 million pounds in 1964 from 3.7 million in 1963.

Sales of fluid milk and cream, in milk equivalent, totaled 515.1 million pounds in April 1964 and 2,091.0 million pounds in the January-April period of 1964.

A STUDY OF FARM ORGANIZATION RELATING TO THE ADEQUACY OF FARM UNITS IN THE R.M. OF FOAM LAKE NO. 276, SASKATCHEWAN

J. ZEMAN

A reliable estimate of the total Parkland area of the Province of Saskatchewan would exceed 20 million acres or about one-third of the total occupied farm acreage. Over one-half of Saskatchewan farms and about one-half of the total cattle population of the province is in this area. This indicates the importance of the Parkland area to Saskatchewan agriculture.

The Prairie area of the province has been the target for many economic studies. This article reviews the findings in one of the infrequent studies[1] made in the Parkland area.

Ownership information was obtained from municipal records and occupancy of farms was established as of 1961, from P.F.A.A. maps. The whole municipality had been inspected, because of a poor crop, and payments were made in all townships.

The field survey was conducted as a one-call survey. Visits were made to 25 one half section and 25 one section farms in October 1962. The farm business year was from November 1, 1961, to October 31, 1962.

Purpose of the Study.—The general objective of this study was to evaluate the over-all conditions of the area and to perhaps indicate what economic factors have favored or hindered agricultural development and adjustments. The specific purposes might be stated as follows:

(1) To enable comparisons with farms on about the same soil type in Manitoba.

(2) To permit measurement of the progress of farmers in the area. What are the factors that have hindered or promoted the progress of farmers, e.g., the land settlement policy, the productivity of the soil, etc.?

(3) To delineate problem areas that may require and benefit from further studies. The study might provide some information which may serve as a guide for such policies as ARDA which are designed to determine alternative uses of land and "to determine the most productive uses of rural resources and development projects to provide increased income and job opportunities". The Farm Credit Corporation might also utilize the information in its appraisal work.

(4) To assess the importance of different enterprises in the farm business. If emphasis should continue on livestock or even increase, then some measurement of the value of a community pasture program in the Parkland area will be necessary.

(5) To determine the amounts and kinds of capital required to establish economic farm units. What is the capacity of farms in the area to provide a net income sufficient for a reasonable standard of living, relating this particularly to size of farm?

(6) To provide basic information that may be used in a resource inventory of the Parkland area.

Description of Survey Area.—The original R.M. of Foam Lake No. 306 was organized December 12, 1910, and the original R.M. of Beaver No. 276 was organized December 11, 1911. The two municipalities were amalgamated in 1954 to form the present R.M. of Foam Lake No. 276. In extent the municipality consists of 15 full townships and two partial townships.

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[1] Some of the studies made are:
(a) Hope, E. C. and R. A. Stutt. An Economic Study of Land Settlement in the Albertville-Garrick Area of Northern Saskatchewan, 1941.
(b) Stutt, R. A. and H. Van Vliet. An Economic Study of Land Settlement in Representative Pioneer Areas of Northern Saskatchewan.
(c) Zeman, J. Progress of Farmers in an Area Adjacent to the Saskatchewan-Carrot River Triangle.

The municipality lies within the area commonly known as the Park Belt or Black soil zone. "The landscape is frequently broken by groves of poplars, willows and shrubs of various kinds. The better moisture conditions of this zone are reflected in the dark color of the soils and the relatively lush growth of native vegetation and cultivated crops.

The soils of the Black soil zone are nevertheless grassland soils and owe their nature to the fact that they developed under a grass cover rather than under trees. In fact, it appears that in many places the trees are comparatively recent invaders of the former grassy plain."[1]

The survey area benefits a higher moisture efficiency than the Prairie area of the province. The variability of rainfall is also generally lower. There is, though, not too much difference in the average annual precipitation throughout Saskatchewan. However, drought conditions have occurred in the municipality and such years as 1937 and 1961 will be remembered as years of low crop yields. The average annual precipitation[2] at Melfort for the 1938-1958 period was 16.6 inches. For the same two decades the frost-free period averaged 102 days and the time between killing frosts (28 degrees F. or lower) was 125 days.

Table 1.—History of R.M. of Foam Lake No. 276—Census of Canada, 1901-1961

Year	Rural population	Farm population	Number of farms	Cultivated acreage per farm
1901	171	171	39[b]	**
1906	1,706	1,706	388[b]	**
1911	3,151	2,966[a]	674[b]	**
1916	3,419	3,164[a]	716	83
1921	3,960	3,509[a]	799	96
1926	3,902	3,466[a]	832	102
1931	4,232	3,911	850	120
1936	4,448	4,046	917	122
1941	4,105	3,696	917	142
1946	3,335	3,075	792	174
1951	3,350	3,091	806	196
1956		2,675	698	237
1961		2,087	614	293

[a] This figure has been calculated by deducting the population of the town of Foam Lake from the rural population.
[b] Based on an estimate of 4.4 persons per farm.
**No reliable information available.

Settlement and Progress.—Settlement of the R.M. of Foam Lake No. 276 started in the early 1900's, and the settlers arrived from beyond the borders of the province in mosts cases. The first settlers was Joshua Milligan who took up land in 1882 about 16 miles west of where the town of Foam Lake is now located. The Milligan family earned a living by operating a trading post for the Indians and doing some ranching.[3]

An Icelandic colony settled in this area in 1890 and 1891, around the south shore of Fishing Lake, 15 miles north of Foam Lake, where the Settlers raised cattle and horses.

There were 716 farms in the area by 1916, and the peak number—917—was reached in 1936. Since 1941 the number of farms has decreased steadily but the cultivated acreage per farm has increased. By 1961 the number of farms had dropped to 614 which is a decrease of one third in the 20-year period since 1941. There is presently no vacant land.

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[1] Soil Survey Report No. 12, College of Agriculture, University of Saskatchewan, June 1944.
[2] Progress Report, 1954-1958, Experimental Farm, Melfort.
[3] Golden Jubilee Edition of Saskatchewan Business Directory.

Table 2.—Educational Trends in the Foam Lake-Wynyard School Unit No. 38

Grade	1954–55	1955–56	1956–57	1957–58	1958–59	1959–60	1960–61	1961–62	1962–63
1	369	333	323	303	333	286	296	281	278
2	358	354	308	322	307	336	301	299	284
3	356	361	337	307	316	300	297	289	294
4	314	318	329	327	293	300	287	287	282
5	300	312	316	323	334	313	324	315	302
6	289	279	290	287	304	294	279	292	308
7	277	279	257	276	282	303	309	296	299
8	244	251	253	221	251	255	262	280	268
9	232	226	220	236	239	263	277	285	312
10	157	169	174	186	196	207	219	224	244
11	108	131	126	135	154	151	169	175	193
12	90	85	100	109	115	134	135	147	151
Total	3,094	3,098	3,033	3,032	3,124	3,142	3,155	3,182	3,215
H. School	587	611	620	666	704	755	800	831	900
P. School	2,507	2,487	2,413	2,366	2,420	2,387	2,355	2,351	2,315

Source:—Superintendent of Schools for the Foam Lake—Wynward School Unit No. 38.

Progress could only be made in the first stages of settlement by clearing the maximum amount of acreage suitable for cultivation on the home quarter. Land was cleared by hand until about 1945, when bush-clearing equipment became quite readily available.

After 1941, the number of farm units began to decrease but the size of some farm units was increased by the purchase of one or more additional quarters of land. The original pattern of settlement was one quarter section of land per homesteader. As pre-emption quarters were not available, expansion of farm units in total area was possible only by purchase. Sections 8 and 26 were deeded to the Hudson's Bay Company and were for sale. Sections 11 and 29 were held in reserve as school land and were available for sale or lease. Other lands had been granted to the Canadian Pacific Railway and were available to the farm operator at a price. Of course, some settlers were willing to sell their homesteads. Others abandoned them and these could be purchased in a tax sale.

The initial heavy influx of settlers became a problem insofar as the municipality is one of the most heavily populated in the province. The 1961 census reveals that there are still many small farms, nearly 15 per cent being one quarter in size, 46 per cent being one half-section or less and 85 per cent one section or less in size.

Ownership and Tenure.—With the pattern of land grants that was responsible for the settlement of the area, it was a matter of one quarter per owner and the land being nearly all owner-operated. In 1921,[1] of the total occupied area, 89 per cent was owner-operated. By 1961 this had dropped to 73 per cent. However, the number of fully owner-operated farms had dropped from 84 per cent in 1921 to 55 per cent in 1961. The number of fully rented farms was five per cent of the total in 1921, and the same in 1961. The highest number of fully-rented farms was in 1941, when 17 per cent of the farms were fully rented. The number of partly-owned and partly-rented farms has increased from 11 per cent in 1921 to 40 per cent in 1961.

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[1] Census of Canada.

Table 3.—Ownership and Tenure, R.M. of Foam Lake No. 276—Census of Canada, Number of Farms

	No. owned	Per cent owned	No. rented	Per cent rented	Owned and rented	Per cent owned and rented	Total no. of farms
1901	—	—	—	—	—	—	39
1906	—	—	—	—	—	—	388
1911	—	—	—	—	—	—	674
1916	—	—	—	—	—	—	716
1921	673	84	41	5	85	11	799
1926	673	77	67	8	122	15	832
1931	646	76	75	9	129	15	850
1936	640	70	123	13	154	17	917
1941	547	60	160	17	210	23	917
1946	534	67	70	9	188	24	792
1951	533	66	50	6	223	28	806
1956	425	61	36	5	237	34	698
1961	342	55	28	5	244	40	614

Table 4.—Ownership and Tenure Trend, R.M. of Foam Lake No. 276—Census of Canada, Land Area

	Acres owned	Per cent	Acres rented	Per cent rented	Total occupied
1921	216,859	89	26,453	11	243,312
1926	199,001	82	43,560	18	242,561
1931	212,296	81	50,047	19	262,343
1936	216,627	77	63,564	23	280,191
1941	204,842	68	95,262	32	300,104
1946	229,778	76	71,552	24	301,330
1951	242,793	78	67,682	22	311,475
1956	228,693	76	72,383	24	301,076
1961	217,466	73	81,266	27	298,732

From information obtained at the municipal office, the following description of the municipality in 1961 can be given. Ninety-four per cent of the land is privately-owned and six per cent is publicly-owned. The area of publicly-owned land was tripled in 1961 with the acquisition of land for the formation of a Community Pasture under P.F.R.A. auspices in 1962. The railroad which originally had been granted land was the owner of only two quarters in 1961. No land was owned by mortgage companies. The municipality-owned land was down to three quarters in 1961. The municipal council has been lenient in the matter of tax foreclosures, and its policy has been to put land back in the hands of someone as quickly as possible, at whatever price was offered.

With respect to privately-owned land, 94 per cent of it is owned by people in the area.

Land Use.—The removal of the tree cover before agricultural development could take place has been a slow process. The 1961 census indicates that 60 per cent of the total acreage is now improved. Survey information (Tables 5 and 6), indicates that in 1962, on the half section farms, 62 per cent of the total acreage was improved. On the one section farms 61 per cent of the total acreage was improved. The 1963 assessment indicates that 60 per cent of the total area is improved.

In 1921,[1] wheat was grown on 14 per cent of the cultivated land and oats on 42 per cent. Wheat was grown on 41 per cent of the cultivated land in 1926, and has since remained the most important crop. In 1961, wheat was grown on

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[1] Census of Canada.

Table 5.—Land Use on 25 Half-Section Farms

	Average per farm	Farms with item	Average for farmers reporting	Per cent of crop land	Per cent of seeded acres	Average yield per acre
	—ac.—	—per cent—	—ac.—	—per cent—		—bu.—
Wheat	84.0	100.0	84.0	42.0	78.5	17.7
Oats	28.7	84.0	34.2	14.4	18.2	36.2
Barley	4.0	16.0	25.0	2.0	2.5	23.3
Flax	—	—	—	—	—	—
Rape	1.2	4.0	30.0	0.6	0.8	Crop failure
Improved pasture	2.3	16.0	14.2	1.1	—	—
Improved hay	7.3	24.0	30.3	3.7	—	—
Summerfallow	72.3	96.0	75.3	36.2	—	—
Total cropland	199.8	100.0	199.8	100.0	—	—
Unimproved acres	116.3	96.0	121.2	—	—	—
Farmstead	4.7	88.0	5.3	—	—	—
Total acres	320.8	—	320.8	—	—	—

Table 6.—Land Use on 25 One-Section Farms

	Average per farm	Farms with item	Average for farmers reporting	Per cent of crop land	Per cent of seeded acres	Average yield per acre
	—ac.—	—per cent—	—ac.—	—per cent—		—bu.—
Wheat	147.7	100.0	147.7	38.6	73.2	19.8
Oats	36.5	84.0	43.5	9.5	18.1	37.6
Barley	15.0	28.0	53.4	3.9	7.4	27.0
Flax	2.5	12.0	21.0	0.7	1.3	7.5
Rape	—	—	—	—	—	—
Improved pasture	4.4	16.0	27.5	1.2	—	—
Improved hay	10.4	32.0	32.5	2.7	—	—
Summerfallow	166.1	100.0	166.1	43.4	—	—
Total cropland	382.6	100.0	382.6	100.0	—	—
Unimproved acres	243.3	96.0	253.5	—	—	—
Farmstead	6.2	92.0	6.7	—	—	—
Total acres	632.1	—	632.1	—	—	—

39 per cent of the cultivated land. In 1921, oats were grown on 42 per cent of the cultivated land but has dropped off since then. However, it has remained second to wheat in importance throughout the years and, in 1961, 11 per cent of the improved acreage was seeded to oats.

A surprising feature is the amount of summerfallow which is not too different from the amount found on farms in the prairie area of the province. The 1961 census indicates that 37 per cent of the cultivated area was then in summerfallow. According to survey records, farmers on half sections had 36.5 per cent of their land in summerfallow in 1962. Census data would indicate that up until recent years the amount of summerfallow remained below one-third of the cultivated acreage.

The total cultivated acreage on the half section farms in the survey sample averaged 200 acres per farm in 1962. Forty-two per cent of the cultivated acreage was devoted to the production of wheat. Every farm in the sample had some wheat seeded; the minimum acreage sown was 20 acres and the maximum 230 acres. Oats was second with 14 per cent of the cultivated acreage being seeded to this crop in 1962. There were 21 farmers who had from 10 to 100 acres of oats seeded. Barley was of minor significance, with only four farms averaging 25 acres sown to the crop. One farm had 30 acres of rape sown, but the crop was a complete failure. Improved hay and pasture accounted for five per cent of the cultivated acreage. Only eight of the farms had land sown to tame grass, and the average acreage on these farms was 30 acres per farm.

The total cultivated acreage on the section farms in the survey sample averaged 383 acres per farm in 1962. On these farms there are some quarter sections with no broken land. On the one section farms, 39 per cent of the cultivated acreage was seeded to wheat in 1962. Every farmer had some wheat seeded with the minimum acreage sown being 50 acres and the maximum being 400 acres. Oats were second in acreage, with 10 per cent being seeded to this crop in 1962. Twenty-one farms had from 15 to 80 acres sown. Only seven farmers had sown barley; the minimum was 28 acres and the maximum 100 acres. Improved hay and pasture accounted for four per cent of the cultivated acreage. There were 11 farms where tame grass was sown with an average of 32 acres per farm.

Yield History.—Acreage yields since 1921 have been as follows:

	Average yields[a]		
Period	Wheat	Oats	Barley
1921–30	18.2	32.4	23.7
1931–40	16.4	27.5	19.9
1941–50	23.3	40.3	26.8
1951–60	23.2	37.8	29.4
1921–60	20.3	34.5	25.0
1962	18.0	35.0	25.0
1962[b]	18.8	36.9	25.3

[a] Secretary of Statistics, Department of Agriculture, Regina.
[b] 1962 Survey information.

These figures would suggest that there is a trend toward increasing yields in this municipality. These increasing yields are undoubtedly due to better farming methods that are possible under the highly mechanized system that has prevailed for the last 20 years. Another characteristic of yields in this area is the lower variability than in the Prairie area of the province. The poorest crop was in 1937 when the average yields were eight bushels for wheat and oats and six bushels for barley. The best crop year was 1951 when the average yields were 35, 45, and 36 bushels per acre for wheat, oats and barley respectively. P.F.A.A. payments were made to every township in the municipality in 1954 and 1961 and to all but two townships in 1941. In 1940 four townships received payment, in 1958 one township and in 1959 two townships. In the 45-year period from 1918 to 1962 there have been eight years when the average yield of wheat was 10 bushels to the acre or less and only 10 years when the average yield of wheat was 25 bushels to the acre or better.

If the area is not as subject to drought as the Prairie area, there are other hazards. Rust and frost have taken their toll. All of these vagaries of nature are reflected in the yield averages.

Crop Production and Harvesting Practices.—As previously indicated about 40 per cent of the total cultivated acreage is in summerfallow. Thus, about 20 per cent of the cultivated acreage or one-third of the seeded acreage is in stubble crop. Wheat is usually seeded on summerfallow and oats and barley on stubble.

Tillage operations are more numerous in this area than in the Prairie area of Saskatchewan. Summerfallow requires more operations and usually preseeding tillage is practised. Tillage operations are performed for the most part with three implements, i.e., the one-way, cultivator and rod weeder. The discer has made its appearance on seven of the small-size farms and 11 of the medium-size farms and probably will displace the one-way as it did in the Prairie area of the province. Drills were found on 20 of the small-size farms and on 24 of the medium-size farms. Much of the seeding is done with a drill.

Harvesting is done largely as a swather and combine operation. Oats are frequently cut with a binder and threshed.

Crop Services.—The crop services that were considered significant for purposes of the study were as follows:

(*a*) **Fertilizer**—Tests have proven that there is a good response to fertilizer in the parkland area. Further research is needed to determine the rate of application which is most desirable from the economic standpoint. It would seem that with the use of the proper fertilizer more stubble crops could be grown and land only summerfallowed every three or four years. Capital rationing may be the reason for the limited use of fertilizer. In 1962, five farmers on the one-half section farms used one and a half tons per farm while 13 farmers on the one section farms used over two and a half tons per farm. It would seem safe to estimate that the bulk was used on summerfallow crop and was sufficient for all the summerfallow acreage at an application rate of 30 to 40 pounds.

(*b*) **Weed Spray**—Chemical weed control has been as widely accepted in the survey area as it has been throughout western Canada. No estimate of acreage covered is available from survey information. However, expenses for weed spray were incurred on 23 of 25 farms in each of the survey samples.

(*c*) **Seed Purchases**—For the most part farmers use home-grown seed. In the survey area 1961 was a poor crop year so it is quite probable that seed purchases for 1962 may have been higher than usual. Seed oats was the grain most frequently purchased. Seed was purchased by 14 of the half section operators and by 11 of the one section operators.

(*d*) **Seed Treatment**—If seed is tested and found disease-free and wireworms are not a problem, seed treatment is not necessary. Fifteen of the farmers on half section farms and nineteen of those on one section farms incurred expenses for seed treatment. Seven of the farmers on half section farms and six of those on one section farms still used formalin for treating seed. It would seem that it is used here because it is less costly than the fungicides that are available. Based on the amount of expenditures made for seed treatment, it would appear that only one farmer on the half section farms and five on the one section farms treated for wireworm control.

(*e*) **Seed Cleaning**—At one time a fanning mill was a common item of equipment on nearly all farms. However, most of the grain cleaning is now done as custom work and three agencies are responsible for seed cleaning. The facilities provided by elevator companies are the most popular of the custom cleaning agencies. The remaining amount is cleaned by portable or stationary seed cleaning plants. Seed cleaning was done in the elevator on 18 of the half section farms and 17 of the one section farms. The other farmers cleaned their seed at home.

Livestock Operations.—As previously indicated, early settlers carried on ranch enterprises immediately north of the town of Foam Lake. This area was relatively clear of bush cover; most of the land being in native grass with a good supply of surface water. Thus livestock can be considered to have been an important part of the agricultural economy of the area since original settlement.

The number of cattle since 1931 has varied in absolute terms from a high in 1936 to a low in 1951.[1] On a per farm basis the peak number was reached in 1961 when the average number per farm was 19.1 head. The lowest number per farm was in 1941 when there was 10.5 head per farm. Hog numbers have not varied a great deal. Highest number was reached in 1931. On a per farm basis the peak was reached in the same year when the average was 4.5 hogs. The total number of hogs in the municipality was at its lowest in 1946. The number per farm was likewise low in the same year when the average number was 2.9 hogs.

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[1] Census of Canada.

With a large number of small farms, many of which have always been on a subsistence basis, a large part of the family living is provided by the farm. The provision of meat, milk, butter and eggs is still of vital significance. On farms of all sizes the livestock enterprise is required to provide income in kind or from sales no matter how small.

Most of the farmers in the survey sample did produce cream for sale during the period of peak production, i.e., May, June, July and August. The same was true for egg production. The main emphasis in the area is on beef production, with cream production from beef strains and very little from dairy type cattle.

Farm Labor.—In the study area, there was an initial need for a large labor force to promote its development. Technology had at that time not developed the machines which would displace manpower on farms. As machines displace labor then the problem of finding off-farm work for the men whose work is being done by a machine must be solved. There is some indication that excess labor is moving out of the area. On the half section farms there were 19 operators who were married and had a family. The average number of children for these 19 families was five per family but only three of these were at home. On the one section farms there were 16 operators who were married and had a family. The average number of children was four per family but only two of these were at home.

In most cases those at home were too young to do much work. It seems that parents were keenly anxious to have their children complete their high school and move into another occupation or take further education. Table 2 indicates a constant increase in high school enrollment. This is taking place despite the fact that enrolment in the public school is decreasing because of the diminishing population of the area. The improvement in levels of education will also raise the levels for farm operators.

Most of the labor is provided by the operator, with a small amount of assistance from his family or hired help. On the half section farms the amount of hired labor used was negligible. On 10 farms some hired help was used during harvest. Unpaid family labor was available on seven farms. On nine farms the labor was all provided by the operator.

On the one section farms some help was hired on 12 farms but in only four cases did this exceed one month. Some unpaid help was available on seven farms and on six farms the operator did all the work.

Part II—Financial Aspects

Farm Capital.—The first settlers in the area started with very limited resources. The original resource, i.e., the land which was free, was of no agricultural value without the addition of two other resources, labor and capital. The settlers filed on their homesteads, put up buildings nearly all of log construction, prepared some land for cropping which meant clearing, breaking, picking roots and stones. This was a time consuming and laborious process and one settler per quarter did provide the one factor of production, i.e., labor, which was very essential to the initial development of the area.

The clearing and breaking of the first land was prompted by the homestead regulations which required a minimum of 25 acres of broken land per quarter within three years of original settlement before the homestead could be patented. A minimum cultivated acreage was necessary to provide a living for the farm family and it was only by increasing the amount of improved land beyond this point that the farmer could hope to improve his lot in life. The production surplus, or the amount that was not home consumed, was very small. Capital accumulation was a slow process and progress was only possible in proportion to the amount of capital that could be accumulated.

By 1962 the capital value of the half section farms in the survey sample averaged $16,330 and the one section farms averaged $30,521. Some of this is represented by rented land and there was some debt amounting to $915 per farm on the half section farms and $3,241 per farm on the section farms. It would appear that those farmers who were willing to go into debt have expanded while the more reluctant operators have stood still. The value of the buildings is a very small portion of the above amount as most of the buildings are of log construction and should be replaced.

Table 7.—Summary of Farm Capital, Potential Current Receipts, Expenses and Return to Operator and Family for Labor and Capital on One-Half Section Farms

Capital and receipts	Average dollars all farms
Farm Capital:	
Land and buildings	9,484
Machinery and equipment	4,788
Livestock	1,959
Horses	105
Total farm capital	16,336
Receipts:	
Crop sales	2,569
Livestock sales	588
Livestock product sales	230
Custom work	29
Other farm income[a]	433
Total receipts	3,849
Returns to operator and family for labor and capital	1,515
Interest on capital	817
Return to operator and family for labor	698
Perquisites:	
Home consumed products[b]	466
Imputed value of house rent	334
Total perquisites	800
Return to operator and family for labor	698
Labor earnings	$1,498

Expenses	Average dollars all farms
Crops:	
Fertilizer	31
Weed and grasshopper spray	24
Seed treatment	6
Seed cleaning	3
Seed purchased	41
Hail insurance	13
Total	118
Machinery:	
Fuel, oil, grease	358
Repairs	171
License and insurance	45
Custom work	110
Total	684
Livestock:	
Livestock purchases	52
Feed purchases	174
Prepared feed incl. salt	9
Pasture rent	7
Vet. and supplies, sire service	13
Twine	10
Total	265
Real estate:	
Taxes	196
Repairs and upkeep	14
Insurance	11
Fence repairs	1
Total	222
Hired labor:	41
Miscellaneous:	
Electricity	65
Telephone	10
Hardware	47
Total	122
Total cash expenses	1,452
Depreciation:	
Machinery	654
Buildings	228
Total	882
Total all expenses	$2,334

[a] P.F.A.A. payments—$252; acreage payments, $173; wood sales, $8.
[b] Milk and butterfat $146; eggs $26; meat $103; garden $81; wood $110.

Table 8.—Summary of Farm Capital Potential Current Receipts, Expenses and Return to Operator and Family for Labor and Capital on One Section Farms

Capital and receipts	Average dollars all farms
Farm capital:	
Land and buildings	18,200
Machinery and equipment	8,985
Livestock	3,409
Horses	143
Total farm capital	30,737
Receipts:	
Crop sales	4,811
Livestock sales	1,258
Livestock product sales	132
Custom work	62
Other farm income[a]	640
Total receipts	6,903
Returns to operator and family for labor and capital	2,973
Interest on capital	1,537
Returns to operator and family for labor	1,436
Perquisites:	
Home consumed products[b]	396
Imputed value of house rent	433
Total perquisites	829
Returns to operator and family for labor	1,436
Labor earnings	2,265

Expenses	Average dollars all farms
Crops:	
Fertilizer	137
Weed and grasshopper spray	37
Seed treatment	13
Seed cleaning	8
Seed purchased	51
Hail insurance	23
Total	269
Machinery:	
Fuel, oil, grease	473
Repairs	322
License and insurance	75
Custom work	199
Total	1,069
Livestock:	
Livestock purchases	83
Feed purchases	101
Prepared feed incl. salt	34
Pasture rent	3
Vet. and supplies, sire service	29
Twine	36
Total	286
Real estate:	
Taxes	396
Repairs and upkeep	41
Fence repairs	6
Total	459
Hired labor:	82
Miscellaneous:	
Electricity	101
Telephone	22
Hardware	74
Total	197
Total cash expenses	2,362
Depreciation:	
Machinery	1,228
Buildings	340
Total	1,568
Total all expenses	$3,930

[a] P.F.A.A. payments—$444; acreage payments—$196.

[b] Milk and butterfat $119; eggs $21; meat $71; garden $109; wood $76.

Slightly under 60 per cent of the capital investment for each size group is represented in the cost of the land and buildings. The second largest item of investment was machinery. Slightly over 29 per cent of the total capital was in machinery on each size of farm. The investment in machinery, per cultivated acre, amounted to $23.94 on the half section farms and $23.46 on the one section farms. Machinery is at various stages of depreciation or lifetime expectancy on these farms. If the machinery on farms in the survey sample was to be replaced by new machinery, the cost would be $77.89 per acre on the half section farms and $66.75 per cultivated acre on the one section farms.

The farmers' estimate of livestock was $1,953 per half section farm and $3,393 per one section farm.

The total capital does not include inventories of feed and grain on the farms and the value of other investments.

Farm Debt.—There are times when it might pay a farmer to go into debt. Starting farmers or those wanting to expand their business may have no choice if they wish to achieve their objective. There are two obstacles to an optimum use of credit by farmers. Farmers tend to be reluctant to go into debt and on the other hand credit may not be available. The gap between these two extremes must be recognized and bridged. The debt-carrying capacity of a farm or the credit rating of the farmer depends on the size of the farm, the quality of the land and the managerial ability of the operator. The productivity of the area would seem to be reasonably adequate. There is no reason to believe that the managerial ability of the operators is below average. However, the limited size of the farms may have been their stumbling block to a greater degree of progress. Because the farms were small they did not constitute very much in the way of collateral for borrowed money.

The number of small farms in the area must be reduced if the average income per farm is to be increased. The process of farm consolidation may have to be speeded up. After over 50 years of settlement, 46 per cent of the farms are still a half section or less in size. Thus it would seem that some financial assistance to worthy recipients at low interest rates would speed up the consolidation and improve the lot of a reduced number of farmers.

Through conversation with a retired loan inspector who worked in the area, it has been ascertained that farmers did borrow money from insurance and trust companies in the 1920's. However, the amount was relatively small, per farm, and did not help too much. Then, with the financial difficulties of the 1930's, there was no loan money available. Companies collected what they could on the outstanding debts. Because of the unfavorable experience loan money became unavailable but, even worse, farmers may not have been in the mood for borrowing even if the money was there.

The main source of credit was the municipality, which is not designed for this purpose. The history of tax arrears in the municipality indicates that it was among the top ten in this respect for the three years 1959-61 inclusive. In July 1962, there were 322 owners of land in this municipality who were behind with their taxes. The amounts ranged from $44 to $2,261 and averaged $342 for each owner having tax arrears.

A check of the annual records of the Department of Municipal Affairs indicates that the total amount of tax arrears for each year since 1927 was at its lowest in 1949 when it was $21,098 and at its highest in 1956 when it was $173,085. During the 34-year period since 1927, this amount has exceeded $100,000 in exactly half the years. The small size of the farms in this municipality can, at least, be partly blamed for the chronic tax delinquency. Because of lack of other sources of credit, when the farmers of this area were confronted with a lack of money they indebted themselves by the amount of their taxes.

Another indication of the fact that the area has been somewhat starved for capital from outside sources would seem to be that not one quarter in the municipality is owned by a mortgage company or by a private owner outside Canada.

The amount of capital investment will undoubtedly continue to rise. The increase will take place in at least two ways. First, as the remaining arable land is cleared, the total value of the land will increase. Secondly, construction of new buildings, which are badly needed in some cases, will increase the capital value of farm units. However, the cultivated acreage per farm should be increased first, either through consolidation of units or additional clearing on the present units. Only then can these farmers afford the construction of new buildings. With the required capital, the last of the arable land could be cleared and brought into production in short order.

Farm Expenses and Depreciation.—Careful attention must be paid to two items of expense, i.e., current cash operating costs and machinery depreciation. The cost to keep various items of machinery running efficiently is the largest single item of cash expense. The farmer is usually well aware of the fact that his repair bills are high. The expense of gas, oil, grease and repairs for the tractor, truck, car and other machines comprised 36 per cent of the cash expense on the half section farms and 34 per cent on the one section farms. Taxes accounted for 14 to 17 per cent of the cash costs on half and one section farms respectively. Crop expenses (custom work, seed purchases, seed cleaning, seed treatment, weed spray, fertilizer, twine) accounted for 16 per cent and 20 per cent of the costs. Livestock expenses (livestock purchases, pasture rent, breeding fees, veterinary services and supplies, prepared feeds and salt and fence costs) accounted for 18 and 11 per cent of the total, respectively.

Depreciation has become more significant as mechanization has increased. A stage is eventually reached where the repair bills are so costly and delays because of breakdowns so frequent that the machine must be replaced. Money is usually not set aside annually for a depreciation reserve but the cost is recognized, perhaps quite painfully, when the replacement of an old or obsolete machine becomes necessary.

The cash expenses were $7.27 and $6.17 per cropland acre, and the depreciation costs $4.11 and $4.10 per cropland acre respectively for the half section and one section farms. Some items of expense do not vary much with differences in size of farm, e.g., building repairs. Other items vary in direct proportion to the size of the farm, e.g., taxes. Overhead costs should decrease on a per acre basis as the size of the farm increases. However, there are counteracting factors that do wipe out some of the cost advantages that could be realized on larger units. Thus, with regard to machinery and equipment, the depreciation costs per acre were about equal on each size of farm. However, the machinery was newer and larger on the one section farms than on the half section farms. As a rule, farmers on small farms tend to buy secondhand machinery. The farmer on the larger farm must take steps to insure that work will be done on time and is prepared to bear extra costs for machinery.

The income from grain was for the crop seeded and harvested in 1962 except for legumes or grasses which were crops seeded prior to 1962, but harvested in that year. In calculating the income from grain[1] it was assumed that all grain and forage not required for seed or feed would be sold or available for sale.

Of the cash income 67 per cent on the half section farms and 70 per cent on the one section farms was derived from the sale of grain and forage. In each case, 20 per cent of the income was obtained from the sale of livestock and livestock products. The remaining portion of farm income was largely from other farm income (P.F.A.A. and acreage payments) which for the year amounted to 11 per cent on the half section farms and nine per cent on the section farms. Custom work was a small source of income.

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[1] Price used for wheat was the 1960-61 and for oats and barley the 1961-62 Canadian Wheat Board payment per bushel (initial, interim and final) for the 20-cent freight zone.

There are several yardsticks by which farm income can be measured. One measure is the simple one of deducting cash expenses from the total cash farm receipts. This method gave a net surplus ranging from $494 to $5,842 on the half section farms and $1,323 to $11,536 on the one section farms. This measure is useful insofar as it does indicate how much a farmer realizes above current cash operating costs.

Income available for living costs, servicing of debts, and capital accumulation ranged from a deficit of $493 to a surplus of $3,713 on the half section farms. Three farms had a deficit. This income averaged $1,515 per farm; 13 farms exceeded the average and 12 were below. On the one section farms it ranged from a surplus of $50 to one of $9,016 and averaged $2,973 per farm; 12 farms exceeded and 13 were below the average.

The value of farm perquisites—farm produce consumed on the farm and an imputed value for house rent—was estimated at $800 for the half section farms and $829 for the one section farms. On the half section farms a value of $466 was placed on home produced and consumed goods, while on the one section farms this was calculated to be $396. The families were slightly larger on the half section farms, which accounts for the difference. The addition of farm perquisites to labor returns brings labor earnings up to $1,498 per farm, on the average, on the half section farms and $2,265 on the one section farms.

Finally, non-farm income must receive some consideration here. The non-farm income consists of money obtained from family allowances, old age pensions and off-farm employment. On the half section farms this averaged $889 per farm and 20 farmers picked up some income in this manner. If this amount is added to labor earnings the total amount becomes $2,387 for the year 1962. However, two of these farmers had no surplus above expenses when income from all sources was taken into consideration. On the one section farms the non-farm income averaged only $253 per farm.

A SURVEY OF CANADIAN LAYING FLOCKS, 1963

J. T. Hill

In the summer of 1963 a survey was carried out by the Canada Department of Agriculture in order to obtain more information about the structure of the Canadian egg industry. The survey was designed to determine some of the important characteristics of the average egg producing enterprise, including such things as flock size, type of farm, marketing methods, major cost items, and type of equipment used in flock management. About 102,000 mail questionnaires were sent out to all egg producers registered with the Agricultural Stabilization Board. The number of questionnaires returned by July 26, 1963 totaled 26,322.[1] Of the 26,322 respondents, 2,268 were no longer raising poultry, 6,400 failed to supply data on flock size and 74 questionnaires were discarded for various reasons, so that only 17,580 questionnaires were used in the analysis. The usable sample thus represented about eight per cent of all farms with hens or pullets but accounted for close to 60 per cent of the national laying flock. As a result the survey covered a large proportion of Canada's commercial egg producers.

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[1] 300 more questionnaires were returned by February 1964.

Flock Size.—The data were broken down by flock size (in Table 1). The largest number of respondents were concentrated in the 100 to 499 hen class, (47.2 per cent). The next largest group was in the smallest class, i.e. 1-99 hens (35.2 per cent). The survey indicated that a large number of producers continue to have small non-commercial flocks of less than 500 hens[1]. About 82 per cent of the producers were in this category.

The 1961 census reported 97.6 per cent of the 223,694 farms reporting laying hens in Canada as having flocks of less than 528 hens (Table 2). In 1951 this figure was 99.6 per cent with 96.3 per cent reporting flocks of less than 178 birds. The survey tends to support the census indication that most of the laying flocks are small although there is a continuation of the trend toward fewer egg producers and larger flocks. The 1961 census reported 320 producers with flocks of 4,973 hens and over. Our survey had completed questionnaires from 334 producers who claimed flocks of 5,000 hens or more on June 1, 1963, two years later. (Table 1).

Table 1.—Egg Questionnaire Survey: Number of Producers Reporting Laying Hens on June 1, 1963, by Flock Size, by Region

Flock size	B.C.		Prairies		Central Canada		Atlantic		Canada	
	No.	per cent	No.	per cent	No.	per cent	No.	per cent	No.	per cent
1- 99....	75	*13.9*	3,472	*52.7*	2,388	*24.5*	245	*34.8*	6,180	*35.2*
100- 499....	102	*18.9*	2,448	*37.2*	5,461	*56.0*	285	*40.4*	8,296	*47.2*
500- 999....	86	*16.0*	303	*4.6*	1,008	*10.3*	50	*7.1*	1,447	*8.2*
1,000- 4,999....	214	*39.7*	310	*4.7*	717	*7.3*	82	*11.6*	1,323	*7.5*
5,000- 9,999....	37	*6.9*	40	*0.6*	115	*1.2*	30	*4.3*	222	*1.3*
10,000-14,999....	15	*2.8*	6	*0.09*	26	*0.3*	4	*0.6*	51	*0.29*
15,000-19,999....	4	*0.7*	2	*0.03*	7	*0.07*	5	*0.7*	18	*0.1*
20,000-29,999....	3	*0.55*	—	—	9	*0.09*	—	—	12	*0.07*
30,000-39,999....	3	*0.55*	—	—	4	*0.04*	1	*0.1*	8	*0.04*
40,000 and over...	—	—	5	*0.08*	15	*0.2*	3	*0.4*	23	*0.1*
TOTAL........	539	*100.0*	6,586	*100.0*	9,750	*100.0*	705	*100.0*	17,580	*100.0*

The survey indicated regional differences in the breakdown of flock size. The largest flocks were found in British Columbia where almost 40 per cent of the respondents had flocks of from 1,000 to 4,999 hens. Prairie respondents reported the smallest flocks, with 90 per cent of the egg producers reporting flocks of less than 500 hens. The Atlantic provinces appear to have a larger proportion of commercial flocks than central Canada. Both Nova Scotia and Newfoundland had a larger proportion of producers with flocks of from 1,000 to 4,999 birds.

Specialized or Sideline Production.—According to our survey egg production in Canada is mainly a sideline operation. In answer to the question about the respondent being engaged in other major farm operations, 84.3 per cent replied "yes" and 12.5 per cent replied "no". Most of the producers raised beef, cereal grains, hogs or dairy cows in addition to their laying hens. Specialized producers were most prevalent in Newfoundland and British Columbia. In both provinces over half of the respondents reported no other farm enterprise. In Nova Scotia and New Brunswick egg production was the major enterprise on 25.2 per cent

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[1] A non-commercial flock was defined for the purposes of this survey as any flock of less than 500 hens.

Table 2.—Census of Canada, June 1961, Farms Reporting Hens and Pullets Six Months and Over

Flock size	B.C.		Prairies		Central Canada		Atlantic		Canada	
	No.	per cent	No.	per cent	No.	per cent	No.	per cent	No.	per cent
1– 77	6,619	*78.4*	85,446	*84.9*	70,505	*71.9*	14,075	*84.6*	176,643	*79.0*
78– 177	574	*6.8*	10,214	*10.2*	13,590	*13.9*	1,423	*8.5*	25,801	*11.5*
178– 527	483	*5.7*	3,929	*3.9*	10,667	*10.9*	724	*4.4*	15,805	*7.1*
528– 972	207	*2.4*	505	*0.5*	1,579	*1.6*	128	*0.8*	2,419	*1.1*
973–4,972	506	*6.0*	464	*0.5*	1,499	*1.5*	237	*1.4*	2,706	*1.2*
4,973 and over	56	*0.7*	45	—	173	*0.2*	46	*0.3*	320	*0.1*
TOTAL	8,445	*100.0*	100,603	*100.0*	98,013	*100.0*	16,633	*100.0*	223,694	*100.0*

and 39.1 per cent, respectively, of the farms reporting. Dairy and beef were the major enterprises associated with egg production in these provinces as well as in Prince Edward Island. Hog production was more important than beef in New Brunswick. In Quebec, Ontario, and the Prairie provinces, egg production is associated with other major farm enterprises, and specialized producers represented from 8 to 16 per cent of the farms reporting. Mixed farming is generally associated with egg production in Ontario. Dairying in Quebec and cereal grain production in Manitoba, Saskatchewan and Alberta were the most important enterprises on farms where eggs were also produced.

Large flocks are an additional characteristic of specialization. Table 3 shows a marked correlation between flock size and number of respondents reporting either speciality or sideline egg production. It is also significant that the flock size in which an equal number of respondents report specialized flocks as report other major farm operations, falls in the neighborhood of 1,000 hens.

The fact that the great majority of egg producers in Canada are producing eggs as a supplement to other activities is illustrated by the added fact that only 16.9 per cent of the producers in the survey reported eggs as a major source of income. Type of equipment used is also indicative of specialization. Only 2.3 per cent reported fully automatic feeding and watering systems although 20.6 per cent reported that some automatic equipment was being used. As many as

Table 3.—Number and Per cent of Producers Engaging in Egg Production as a Specialty or as a Sideline, by Flock Size—Canada, June 1963

Flock size	Specialist		Sideline		Total	
	No.	per cent	No.	per cent	No.	per cent
1– 99	326	*5.3*	5,854	*94.7*	6,180	*100.0*
100– 499	983	*11.8*	7,313	*88.2*	8,296	*100.0*
500– 999	481	*33.2*	966	*66.8*	1,447	*100.0*
1,000– 4,999	903	*68.3*	420	*31.7*	1,323	*100.0*
5,000– 9,999	191	*86.0*	31	*14.0*	222	*100.0*
10,000–14,999	45	*88.2*	6	*11.8*	51	*100.0*
15,000–19,999	16	*88.9*	2	*11.1*	18	*100.0*
20,000–29,999	11	*91.7*	1	*8.3*	12	*100.0*
30,000–39,999	8	*100.0*	0	*0.0*	8	*100.0*
40,000 and over	9	*39.1*	14	*60.9*	23	*100.0*
TOTAL	2,973	*16.9*	14,607	*83.1*	17,580	*100.0*

73 per cent of the egg producers in the survey did not have any automatic equipment but reported hand-filled feeders and waterers only.

Management.—Evidence of the growth in the size of flocks is given by the proportion of producers (42.5 per cent) who have increased the size of their flocks since 1959. While 34.3 per cent cut back during the same period the others maintained the same size. Saskatchewan was the only province to show more producers reducing their flocks than increasing them. Producers in British Columbia, New Brunswick and Newfoundland revealed the greatest expansion. (Table 4).

Flock replacement occurs fairly frequently in Canada. In maintaining their flocks, 61.4 per cent of the producers kept their hens in lay for one year or less, and close to 35 per cent kept them for one year or more.

Table 4.—Change in Flock Size Since 1959, Percentage of Producers Increasing, Decreasing, or Maintaining Flock, by Province

	Increase		Decrease		No change	
	No.	per cent	No.	per cent	No.	per cent
British Columbia	325	*60.3*	149	*27.6*	65	*12.1*
Alberta	1,117	*40.4*	1,052	*38.0*	597	*21.6*
Saskatchewan	724	*36.7*	854	*43.3*	395	*20.0*
Manitoba	819	*44.3*	630	*34.1*	398	*21.5*
Ontario	3,343	*41.3*	2,614	*32.3*	2,131	*26.4*
Quebec	795	*47.9*	530	*31.9*	334	*20.1*
New Brunswick	53	*57.6*	25	*27.2*	14	*15.2*
Nova Scotia	99	*48.1*	66	*32.0*	41	*19.9*
Prince Edward Island	188	*48.6*	115	*29.7*	84	*21.7*
Newfoundland	15	*75.0*	3	*15.0*	2	*10.0*
CANADA	7,478	*42.5*	6,038	*34.3*	4,064	*23.1*

Management decisions were influenced by several factors. The survey found that feed costs, current egg prices and last year's income in that order, were the three most important factors influencing the producer's decisions regarding his egg operation. With only one exception, these were the three most important factors for each province. The one exception was Newfoundland, where producers listed available credit and the farm help situation as more important factors than last year's income. Feed costs were more important than current egg prices in all provinces except the Prairies. In P.E.I., egg prices and feed costs were of equal importance, no doubt because of the large amount of grain grown locally in this island province.

Marketing Patterns.—Most of the respondents did not grade their own eggs, but sent them to grading stations. Only 11.3 per cent graded their own eggs. Most of the eggs graded on the farm were sold directly to consumers. (Table 5). The number of producers selling eggs to wholesale or retail outlets amounted to seven per cent of the total, a significantly low figure. While three-quarters of the producers sold their eggs to grading stations, 19.0 per cent consumed a major portion of their production on the farm. These latter producers were the owners of flocks of less than 100 birds who were obviously keeping hens for their own use. Those producers who sold their eggs ungraded directly to consumers amounted to 15.8 per cent of the total. Compared with Central Canada and the Prairies a larger proportion of producers in British Columbia and the Atlantic Provinces grade their own eggs. In British Columbia, this is a reflection of the large flock owners having more specialized equipment, including automatic grading machinery.

Table 5.—Marketing Pattern of Respondents in Egg Questionnaire Study, by Region, June 1, 1963

	B.C.		Prairies		Central Canada		Atlantic		Canada	
	No.	per cent	No.	per cent	No.	per cent	No.	per cent	No.	per cent
Producer grader	147	*27.3*	694	*10.5*	968	*9.9*	176	*25.0*	1,986	*11.3*
Sold to retail outlet	64	*11.9*	201	*3.0*	327	*3.4*	75	*10.6*	667	*3.8*
Sold to wholesale outlet	50	*9.3*	214	*3.2*	216	*2.2*	82	*11.6*	562	*3.2*
Sold direct to consumer	82	*15.2*	342	*5.2*	596	*6.1*	71	*10.1*	1,091	*6.2*
No answer	7	*1.3*	83	*1.2*	86	*0.9*	7	*1.0*	183	*1.0*
Does not grade	361	*67.0*	5,623	*85.4*	8,436	*86.6*	500	*70.9*	14,920	*84.9*
Sells to grading station	313	*58.1*	4,536	*68.8*	7,812	*80.2*	454	*64.4*	13,115	*74.6*
Sells direct to consumer	54	*10.0*	1,620	*24.6*	1,016	*10.4*	94	*13.3*	2,784	*15.8*
Consumes on the farm	33	*6.1*	1,934	*29.4*	1,282	*13.2*	88	*12.5*	3,337	*19.0*
No answer	24	*4.5*	190	*2.9*	289	*3.0*	17	*2.4*	520	*3.0*

Table 6.—Comparison of Number of Hens and Producers Recorded by Questionnaire Survey With Related Data Obtained by the Dominion Bureau of Statistics

	Dominion Bureau of Statistics		Department of Agriculture survey		Survey as a per cent of D.B.S. data	
	Laying hens June 1, 1963	Farms reporting hens 1961	Laying hens June 1, 1963	Respondents reporting hens, June 1, 1963	Hens	Farms
	000's		000's		per cent	
British Columbia	2,420	8,445	1,235	539	51.0	6.4
Alberta	2,170	37,474	988	2,766	45.5	7.4
Saskatchewan	1,690	43,361	238	1,973	14.1	4.6
Manitoba	2,055	19,768	1,486	1,847	72.3	9.3
Ontario	8,700	53,431	6,490	8,091	74.6	15.1
Quebec	3,305	44,582	1,266	1,659	38.3	3.7
New Brunswick	472	6,274	130	92	27.5	1.5
Nova Scotia	1,050	5,415	832	206	79.2	3.8
Prince Edward Island	240	4,003	70	387	29.2	9.7
Newfoundland	228[a]	941	56	20	24.6	2.1
CANADA	22,336[b]	223,694	12,790	17,580	57.3	7.8

[a] This figure was obtained from the 1961 census. D.B.S. June 1 surveys to not include Newfoundland.

[b] This figure may be lower than the actual number since Newfoundland egg marketings have increased considerably in the last two years.

Conclusions.—The data obtained from the egg questionnaire give us some indication of the structure and of the marketing patterns of the egg industry. Although the survey included 17,580 producers with laying hens, which represents about 8 per cent of the 223,694 farms reporting hens and pullets in the 1961 census, the total number of hens reported by respondents amounted to 12,790 thousand which accounted for 58 per cent of the 22,102 thousand hens reported on Canadian farms at June 1, 1963[1].

Comparison of the 1961 census breakdown of flock sizes with the questionnaire data reveals that a larger proportion of commercial egg producers were included in the questionnaire survey. The census included any farm reporting hens which included a vast number of very small flocks hardly representative of commercial egg production. Our survey covered over half of the hens in Canada, as reported by the Dominion Bureau of Statistics. (Table 6)

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[1] According to the D.B.S. Report on the Poultry Survey of June 1, 1963 published August 1963. See table 2, page 67.

Even though the survey covered a greater proportion of larger flocks, it still revealed that most of the egg producers in Canada have small non-commercial flocks. The modal group was 100-499 hens. A total of 8,296 respondents, or 47.2 per cent, were in this range. The modal flock range varied from region to region. In the Atlantic and Central provinces it was 100 to 499 but in the Prairies most producers were in the 1 to 99 hen range and in British Columbia in the 1,000 to 4,999 flock size.

Table 7.—Type of Equipment Used by Egg Producers in their Laying Houses, Automatic or Hand-filled Feeding and Watering Systems, by Flock Size, June 1963

Flock size	Fully automatic systems		Both automatic and manual systems		Manual systems only		Total respondents[a]	
	No.	per cent	No.	per cent	No.	per cent	No.	per cent
1- 99	28	0.5	217	3.5	5,452	88.2	6,180	100.0
100- 499	80	1.0	1,419	17.1	6,642	80.0	8,296	100.0
500- 999	31	2.1	816	56.5	578	39.9	1,447	100.0
1,000- 4,999	136	10.3	999	75.5	169	12.8	1,323	100.0
5,000- 9,999	80	36.0	129	58.1	7	3.2	222	100.0
10,000-14,999	29	56.8	20	39.2	1	2.0	51	100.0
15,000-19,999	9	50.0	7	38.8	1	5.6	18	100.0
20,000-29,999	7	58.3	5	41.7	—	—	12	100.0
30,000-39,999	2	25.0	6	75.0	—	—	8	100.0
40,000 and over	7	30.4	2	8.7	5	21.7	23	100.0
TOTAL	409	2.3	3,620	20.6	12,855	73.1	17,580	100.0

[a] In some cases a small percentage of respondents left this question blank. They are included in total respondents and thus account for the difference in addition.

The larger the flock size the greater the tendency toward specialization. Most of the egg producers have other major farm operations, generally cereal grains in the prairies and livestock (dairy, hogs or beef) in the other provinces. Modern equipment is not very common in most egg operations in Canada. Only 20 per cent of the farms reporting have some automatic equipment and 2.3 per cent are fully mechanized. The larger the flock the more modern equipment used. Most flocks of 5,000 hens or more are fully mechanized according to our survey.

Most of the producers included in the survey marketed their eggs through registered grading stations. Few grade their own eggs (11.3 per cent). Since about 50 per cent of the total eggs produced on farms are graded in registered stations, we have further evidence that the survey covered larger flocks.

UNITED NATIONS PUBLICATION

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.
Sold in Canada by the Queen's Printer, Ottawa.

Monthly Bulletin of Agricultural Economics and Statistics. Volume 13, No. 3, March 1964. Food and Agriculture Organization, Rome, Italy.

The special feature consists entirely of charts (66 charts in 19 Figures) describing the Structure and Trends of World Agricultural Trade. The first section deals with the General Patterns of Agricultural Trade; the data refer to trade from all sources to all destinations. The second section is concerned with Trends in Agricultural Trade. It covers trade in 54 agricultural products but, owing to the lack of data for earlier years, it excludes the trade of centrally-planned countries, except for exports from or imports to the rest of the world, that is, it takes no account of changes in trade between the centrally-planned countries.

OTHER PUBLICATIONS

A Study of Labour Utilization on a Sample of Farms in South West England, 1960/61. Davies, E. T., Department of Economics (Agricultural Economics), University of Exeter, Newton Abbot, Devon, England. Report No. 143, September 1963. pp. 65. Price: 3/6.

In his Introduction the author draws attention to the fact that in the last decade "labour management on British farms has received considerable attention. Many factors have been responsible for this development, but two major factors stand out. First, the general expansion of industrial activity which has steadily drawn workers from farms to the urban areas and, second, the increasing importance of farm labour costs. Both these considerations emphasize the need for a productive and efficient labour force in farming at the present time".

He organizes his report along the following chapter headings: General Information; Sources of Labour and the Overall Pattern of Labour Use on Five Types of Farming Groups—Exeter Province 1960/61; The Employment of Direct Labour; Unit Labour Requirements; and Appendices (Statistical).

Working and Living Conditions in Canada. Economics and Research Branch, Department of Labour, in consultation with The Department of Citizenship and Immigration. Ottawa. 1963. pp. 84. Available from The Queen's Printer, Ottawa. Price: 35 cents.

This twelfth edition of this publication—the same as previous ones—supplies information to people who wish to emigrate to Canada on working and living conditions in Canada. The material is organized under the following Section headings: Population and Employment; Finding a Job; Wages, Salaries and Earnings; Working Conditions; Education and Training; Living Standards; Social Welfare Services; and Government.

The Government's Role and the Future of Discovery, by Max Tishler, President, Merck Sharp & Dohme Research Laboratories, Merck & Co., Inc., Rahway, New Jersey. An address to the American Section, Society of Chemical Industry, September 26, 1963. Houston, Texas, U.S.A. (Available from the M.S. & D. Research Laboratories).

Tishler stresses the rapid growth of U.S. federal support for research and development from an expenditure of only $74 million in 1940 to one of $14.9 billion in 1963, which is 200 times the 1940 rate. In 1939, U.S. industry, government, universities and foundations, combined, spent only $500 million on Rand D; in the 1964 fiscal year they are expected to spend $20 billion.

Tishler stresses the need for continued and expanding "free interchange between university and industry laboratories" as a parallel to growth in government-sponsored research. "The broad problem" he says, "is how to protect the public interest and, at the same time, maintain healthy incentives for the growth of private research and our free enterprise economy".

Dynamics of Adjustment in the Broiler Industry. Tobin, Bernard F. and Henry B. Arthur. Division of Research, Graduate School of Business Administration, Harvard University. Boston. 1964. pp. xii+164. Price: $3.00.

This study of the broiler industry is the first study of an individual commodity, under the Program in Agriculture and Business of the Harvard Business School. As stated in the Foreword by Bertrand Fox, Director of Research, it "examines management problems during this period of dramatic adjustment as the industry has adopted itself to new technologies, new forms of organization, and new market conditions. The analysis of the past then provides a foundation for an appraisal of the future prospects and problems of the industry in achieving greater stability and at the same time maintaining its strong progressiveness".

Chapter 1 traces developments in the poultry business since the end of the first World War, stressing technological progress in the 1945-55 period and the role of credit in the great expansion in this agricultural business.

Chapter 2 considers the basic operations and functions of the industry and stresses the tremendous increase in "integration".

Chapters 3-7 are concerned with the cyclical instability of the industry, its causes and its solutions.

Chapter 8 deals with structural, technological and institutional changes. It assesses the importance of these changes in an industry which is moving toward maturity, as well as the efficiency that ensues from economies of scale.

Chapter 9 describes the industry's efforts to act "as a manufacturing industry in terms of its push toward product differentiation", and to stabilize its market position.

Chapter 10 consists of a brief review of current problems and possibilities and Chapter 11 sums up the major threads of the discussion, re-emphasizing the need for competent management and effective integration.

Wheat Production in South-West England. An Economic Study of 56 Farms in Cornwall, Devon and Dorset, 1962. Department of Economics (Agricultural Economics), University of Exeter, Newton Abbot, Devon, England. Report No. 145, January 1964. pp. 27. Price. 3/6.

This report is chiefly concerned with inputs and returns, for the 1962 wheat crop.

Fertiliser Statistics, 1963. The Fertiliser Manufacturers Association Limited, 44 Russell Square. London, WC1, England. February 1964. pp. 20.

The first part of this report contains statistics on: acreage of main crop groups, consumption of inorganic fertilisers, consumption of compound fertilisers, average concentration of all compounds, and proportion of total nutrients in straight and compound form, for the 1957-58 to 1962-63 period. The second part discusses the results of a large fertiliser usage survey carried out in 1962 by the National Agricultural Advisory Service with the assistance of members of The Fertiliser Manufacturers Association Limited. This large survey complements smaller annual surveys made in years following the extensive survey made in 1957, the results of which were discussed in Fertiliser Report and Statistics, 1959. The results of the 1962 survey indicate that there has been general progress in fertiliser applications, particularly in applications of nitrogen, and that there has been a most noteworthy advance in the treatment of grassland, even if there still remains plenty of room for improvement.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS BRANCH

S. C. HUDSON, Director-General

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935–39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87,4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131|6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	240.8	195.5	286.0	271.9	290.7	234.9	130.7	126.2	186.1
1963	244.6	229.9	184.4	275.4	259.3	298.6	237.4	133.0	130.3	196.2
1963										
Jan	243.0	239.6	195.8	283.3	269.8	293.0	237.4	132.0	129.0	190.2
Feb	242.8	236.7	199.6	273.8	268.6	....	....	132.1	129.4	191.3
Mar	242.4	234.7	200.5	268.8	265.8	....	....	132.1	128.9	193.5
April	242.8	231.6	196.6	266.6	262.2	301.0	238.1	132.3	128.9	192.9
May	244,4	234.5	197.1	271.9	263.4	....	....	132.3	128.3	194.7
June	245.7	240.1	200.1	280.1	268.8	....	....	132.8	129.7	195.1
July	246,2	242.3	198.6	286.1	271.8	....	....	133.5	132.5	191.9
August	244.7	227.6	169.6	285.6	251.7	301.9	236.8	133.9	133.2	194.9
Sept	245,0	224,5	163.9	285.2	252.1	....	....	133,4	131.3	198.1
Oct	245.9	216.7	163.3	270.1	247.3	....	....	133.6	130.4	200.2
Nov	246.7	216.5	163.1	269.8	245.0	....	....	134.0	130.8	203.5
Dec	245.3	213.9	164.7	263.1	244.5	....	....	134.2	131.4	207.7
1964										
Jan	246,9	215.8	167.3	264.2	244.0	299.4	242.2	134.2	131.4	210.8
Feb	246.1	215.9	165.6	266.2	245.1	....	....	134.5	131.3	212.3
Mar	245.6	215.1	164.7	265.6	245.5	....	....	134.6	131.3	210.2
April	245.6	215.4	165.7	265.0	245.8	309.9	244.1	135.0	131.8	215.1
May	245.9	219.1	170.8	267.4	247.5	....	....	135.0	131.2	....
June	245.4	227.2	180.7	273.8	253.6	....	....	135.3	132.5	....
July	244.9	223.7	179.1	268.3	252.1	....	....	136.2	135.4	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) 1964 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

Investment.—The midyear review, Private and Public Investment in Canada-Outlook 1964, published by the Department of Trade and Commerce, indicates that investment plans for 1964, in all sectors of the Canadian economy, have greatly expanded since the survey made at the beginning of the year. Present plans call for total capital outlays of $10.8 billion. If these plans are realized they will represent a 16 per cent increase over 1963. In both value and volume terms this investment program would be the largest on record and would represent the sharpest annual increase in capital investment since 1956.

The great expansion in investment plans reflects the strong growth in the economy in recent years. Productive capacity has progressively been more fully utilized, profits have increased, and prospects for further increases in demand appear favorable. In terms of rates of increase and as a proportion of gross national production, the current program is the most ambitious one to be attempted in some years. Its achievement will depend more on supply conditions than did other investment programs since 1956-57. For the first time in some years, there is evidence of some pressure on the available supply of certain basic materials, particularly steel.

Investment plans, by sectors, in millions of dollars, may be summarized as follows:

	Capital expenditures			Repair expenditures			Capital and repair expenditures		
	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Total
Agriculture and fishing..	201	584	785	76	173	249	277	757	1,034
Forestry................	34	42	76	15	32	47	49	74	123
Mining, quarrying oil wells..................	442	170	612	37	110	147	479	280	759
Manufacturing...........	416	1,353	1,769	132	635	767	548	1,988	2,536
Utilities...............	1,384	708	2,092	312	483	795	1,696	1,191	2,887
Construction industry...	17	108	125	4	143	147	21	251	272
Housing.................	2,015	—	2,015	577	—	577	2,592	—	2,592
Trade-wholesale and retail................	164	203	367	36	46	82	200	249	449
Finance, insurance and real estate............	267	42	309	18	4	22	285	46	331
Commercial services....	133	216	349	12	52	64	145	268	413
Institutional services....	686	120	806	60	16	76	746	136	882
Government departments..........	1,343	163	1,506	343	60	403	1,686	223	1,909
Total..................	**7,102**	**3,709**	**10,811**	**1,622**	**1,754**	**3,376**	**8,724**	**5,463**	**14,187**

Prices of Commodities and Services Used by Farmers.—The all-Canada composite price index of commodities and services used by farmers (1935-39=100) reached 282.4 in April 1964 from 276.3 in January 1964 and 275.2 in April 1963. The rise between January and April 1964 stemmed chiefly from seasonal increases in farm wage rates. Exclusive of the living component, the index rose to 309.9 in April from 299.4 in January 1964 and 301.0 in April 1963.

The farm wage rate index rose to 643.0 in April from 587.8 in January; the eastern index rose to 611.0 from 605.9 and the western index to 688.6 from 562.1.

The equipment and materials index rose to 244.1 in April from 242.2 in January.

The farm family living index dropped to 241.2 in April from 241.7 in January. Lower prices for food and miscellaneous items outweighed higher prices for clothing, fuel, household equipment, and health maintenance.

Population.—Canada's population rose to 19,272,000 at July 1, 1964, from 18,928,000 at the June 1, 1961 census. The increase in the first half of 1964 was 170,000; the corresponding figures for the first and second halves of 1963 were 161,000 and 174,000 respectively. Figures, in thousands, for Canada and its provinces, at various dates since 1961, are as follows:

	Census June 1, 1961	1 July 1962	1 Jan. 1963	1 July 1963	1 Jan. 1964	1 July 1964
CANADA	18,238	18,600	18,767	18,928	19,102	19,272
Newfoundland	458	471	477	482	486	491
Prince Edward Island	105	106	107	107	107	107
Nova Scotia	737	746	750	758	763	761
New Brunswick	598	608	611	614	615	617
Quebec	5,259	5,376	5,430	5,475	5,524	5,573
Ontario	6,236	6,351	6,401	6,462	6,532	6,604
Manitoba	922	936	944	951	957	959
Saskatchewan	925	931	930	934	936	944
Alberta	1,332	1,374	1,394	1,408	1,421	1,433
British Columbia	1,629	1,662	1,684	1,697	1,720	1,742
Yukon	14	15	15	15	16	16
Northwest Territories	23	24	24	25	25	25

Domestic Exports.—Domestic exports from Canada reached a new peak in the first semester of 1964. They rose by 22 per cent to $3,833.6 million from $3,141.7 million in the first six months of 1963. The general increase in exports was mostly attributable to a greater volume of trade. The average level of export prices rose less than one per cent over the level for the first six months of 1963 while the average index of physical volume rose by over 21 per cent.

Among the principal commodities, wheat exports far exceeded all others. The chief increase was in deliveries to the U.S.S.R. which totaled $187.2 million. Smaller, but important shipments, were made to Poland, Bulgaria, Czechoslovakia, Cuba, and Albania. Impressive gains were also recorded in wheat shipments to the Federal Republic of Germany and the Netherlands, and a small gain in deliveries to Japan. Wheat exports to the United Kingdom decreased by nine per cent and those to Belgium and Luxembourg, Mainland China, and the United States by over 33 per cent.

The general advance in export trade was well sustained in the second quarter of 1964, and domestic exports rose by 23.3 per cent, over the April-June period of 1963, to $2,096.5 million.

Domestic exports to the United States in the January-June period of 1964, rose by 11.1 per cent to $2,011.6 million over the corresponding period of 1963. Exports to Britain rose by 23 per cent.

Wheat, though still the leading export commodity, dropped by 9.1 per cent, but most other principal commodities recorded large advances.

DEMAND FOR BEEF IN 1980 AND RELATED LAND REQUIREMENTS

A farmer needs several years to build up a beef herd. Consequently, in planning his beef enterprise he must have some concept of the long-run demand for beef. Likewise, the soundness of government programs for the development of community pastures and loans to assist the development of beef enterprises hinges largely on long-term demand prospects. To meet these needs a committee was appointed in 1963, in the Economics Division, to prepare a forecast of land requirements for beef production in 1980.[1]

In the preparation of this forecast the work done included:

(*a*) an estimate of domestic consumption of beef and veal in 1980. Domestic consumption of beef and veal depends on population and consumption per person. Consumption per person in turn depends on several economic and institutional factors. Among the most important of these are prices, income and its distribution, technological developments which may effect either the relative cost or relative appeal of various foods, and attributes towards various feeds.

(*b*) An estimate of the net balance of international trade for beef and veal, that is, the export or the import balance.

(*c*) A conversion of beef and veal requirements to numbers of cattle slaughtered and on farms. To move from beef and veal to livestock numbers we had to make a forecast of carcass weights and of the ratio of cattle on farms to cattle slaughtered. We also had to take probable changes in the dairy herd into consideration.

(*d*) An interpretation of cattle production in terms of land requirements for 1980.

These, the four main parts of our forecasting project, were not distinct but interrelated parts all geared toward our central objective—as reliable a forecast as could be made with available information.

Our analysis of relevant data led to the following interpretations of the past and current situation, and projections of future developments.

Population.—On the basis of the latest available information Canada's population should reach 27 million in 1980, assuming a net immigration rate of 25,000 a year. Canada's net immigration rate was at about this level in 1961, but has been somewhat higher in subsequent years.

Consumption per Person.—In 1958-62 the average annual consumption of beef and veal, in Canada, was 75.5 pounds per person, per year.[2] It is expected that the average will be between 90 and 100 pounds by 1980. The upper estimate would be closely approached if trends in food consumption patterns prevailing since 1947, and even since 1935, continued without abatement. Allowing for the impact of price changes, beef consumption has been increased about 1.2 pounds per person per year, which would means an increase of 24 pounds by 1980. Consumption of veal per person is expected to decline from about seven pounds in the 1958-62 period to four or five pounds in 1980. This decline will occur because veal is a by-product of the dairy industry and it seems probable that milk requirements will be met with no increase in cow numbers. Taking this into consideration, projection of the trend would indicate an average consumption of beef and veal of about 98 pounds per person in 1980. Our forecast of 95 pounds[1] allows for a small abatement in the upward trend in beef consumption per capita.

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[1] This Committee consists of L. E. Drayton, J. M. Fitzpatrick, V. Gilchrist, C. Haase, C. I. Johnston, D. W. Oke, D. W. Ware and Z. J. Yankowsky. In the preparation of the forecast of the demand for beef, assistance and advice were supplied by J. E. R. Greenshields, K. Rasmussen and F. Whiting, Research Branch, J. D. Baird, Livestock Division, and V. W. Yorgason, Economics Division of the Canada Department of Agriculture.

[2] These figures exclude beef and veal consumed as canned meat and offal.

The forecast level of beef consumption will not be attained if beef prices rise out of proportion to the prices of other foods, especially other animal protein foods. The 1958-62 average retail price of beef expressed in terms of 1949 dollars was 60 cents a pound. The forecast assumes that beef prices will be maintained close to or at this level up to 1980. If general food prices increase, we assume that beef prices will also increase at the same rate.

A basic premise to this forecast is that the Canadian economy will maintain the rate of growth that has prevailed since the end of the war. This is important since the increase in per capita income has probably been the main factor behind the upward trend in per capita beef consumption which has prevailed since 1935. Available data do not permit an exact determination of income elasticity of demand for beef and veal in Canada, but there can be no doubt that it is positive and higher than that for most foods. Available analyses indicate that it may stand at about +0.5. Use of this figure and of income projections supplied by the 1955 Royal Commission on Canada's economic prospects leads to a consumption estimate of 95 pounds per capita in 1980. There can be little doubt that failure to maintain a fairly consistent high rate of economic growth from now until 1980 would weaken our forecast. On the other hand, an acceleration of the rate of growth would likely lead to a higher level than indicated by our forecast.

In our forecast analysis we also assume that the rise in incomes will benefit the lower and middle income groups at least as much as the upper group. Most of the expected expansion in consumption will probably come from increases in the middle and lower income groups.

No allowance was made for possible further technological developments, and changes in tastes and preferences, which could upset our forecast level of beef consumption. At present a strong consumer preference for beef over most other sources of protein supports the market for it. Attitudes to beef could scarcely become more favorable but they could become less so. Likewise, technological developments might increase the appeal of other protein foods and thus alter the preference for beef. Any decline in preference would, at the very least, lead to a slowing-down in the upward consumption trend. However, there are no prospects of early developments that might affect this preference.

Exports and Imports.—From 1958 to 1962 Canadian net exports of live cattle of all classes averaged 446,000 head a year, almost all of which went to the United States. (Table 1). There can be little confidence in any forecast of live cattle exports as their volume has been erratic and much will depend in the future on policies in other countries, especially the United States. Forecasts of United States beef consumption in 1980 range from 19 billion to 30 billion pounds. Assuming no change in the proportion of United States beef supplies coming from Canada, the lower figure would be consistent with a small increase in Canadian exports, while the higher figure would suggest exports of about 700,000 head. The Committee has accepted 600,000 head as the forecast of exports to the United States and have assumed that sales to other countries will continue to be negligible.

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[1] With respect to the possibility of attaining this level of beef and veal consumption, it may be noted that United States per capita consumption was estimated at 100 pounds in 1963 and Argentine consumption in excess of 200 pounds annually in the 1955-58 period.

Table 1.—Net Exports of Live Cattle, 1958-62, and Projection for 1980[a]

Year	Class of Cattle					Total
	Purebred	Grade dairy	Beef, 200–700 pounds	Beef, over 700 pounds	Calves under 200 pounds	
	— thousand head —					
1958	25	20	370	241	12	668
1959	20	15	183	61	30	309
1960	19	17	139	59	31	265
1961	21	20	332	96	29	498
1962	20	18	343	72	37	490
1958–62 average	21	18	273	106	28	446
1980 projection						600

[a] Imports averaging about 10 thousand head per year were deducted from exports to obtain net figures.

There is international trade in fresh, frozen, pickled, cured and canned beef and veal. Canadian trade in these products is substantial, and Canada is both an importer and exporter. In some recent years imports have exceeded exports but in others the reverse has been true. This wayward trend could easily change by 1980 but there is no reliable indication, at present, of the extent and direction of such changes, if any. Accordingly, it is forecast that net trade movement in fresh, frozen, pickled and cured beef in 1980 will not be large enough to have a significant effect on land requirements for beef production.

Although Canadian net imports of canned beef, including corned, are somewhat greater than those of fresh and cured beef, they are not included in this forecast, as Canadian per capita consumption data for beef exclude beef used for canning.

Canning Requirements.—In recent years the quantity of beef used for canning in Canada has been between one and two per cent of total domestic beef requirements. Most, if not all, of the canned beef is drawn from low-grade carcasses not wanted by the retail trade. As imports of canned and corned beef now form a very substantial proportion of total Canadian supplies, and foreign supplies are likely to continue to remain available at competitive prices, it seems unlikely that more than two per cent of the 1980 Canadian beef output will be used for canning. Because of the large margin of error, likely in any long-run forecast of demand, adjustment for this factor was deemed unnecessary.

Slaughterings in 1980.—The Committee forecast an average consumption of 95 pounds of beef and veal per person in 1980, by 27 million Canadians. This would mean that our total beef and veal consumption will be 2,565 million pounds as compared with an annual average of 1,348 million pounds in 1958-1962, an increase of 90 per cent.

In the 1958-62 period the annual veal calf averaged 1.1 million and yielded an average of 122 million pounds of veal. (Table 2). Veal calves come almost entirely from dairy herds. There is considerable evidence that the number of milk cows will not be much greater in 1980 than it is now. Accordingly, it is forecast that Canadians will consume 125 million pounds of veal from 1.1 million calves in 1980. Projection of the trend in veal consumption since 1947 would indicate a slightly lower quantity.

Table 2.—Supply of Veal in Canada, 1958-62, and Projections for 1980

Year	Animals slaughtered	
	Number	Estimated dressed weight[a]
	thousand	million pounds
1958	1,191	126
1959	1,093	121
1960	1,082	125
1961	1,049	124
1962	990	121
Average	1,081	123
1980 projection	1,100	125

[a] Domestic consumption of fresh veal averages about one million pounds a year below these figures, when account is taken of quantities used for canning.

Allowing for veal consumption of 125 million pounds our forecast would indicate a consumption of 2,440 million pounds of beef in 1980. (Table 3). From 1958 to 1962 an annual average of 2.4 million carcasses were needed to produce 1,226 million pounds of beef a year. However, average carcass weight has shown a marked upward trend in recent years and reached a record 522 pounds in 1963. It is difficult to judge how far this trend may go but a further two per cent increase in average carcass weight to 530 pounds in 1980 would seem to be a conservative forecast. Assuming that average carcass weight is 530 pounds in 1980, it will take 4.6 million carcasses to meet the estimated beef requirements.

Summarizing the foregoing forecasts, total slaughterings and exports of cattle and calves in 1980 are expected to be 6.3 million as compared with an annual average of 4.0 million in the 1958-62 period. (Table 4).

Table 3.—Supply of Beef in Canada, 1958-62, and Projections for 1980

Year	Number of animals	Slaughtered, estimated dressed weight	Weight per carcass	Net imports[a]	Net beef supply	Used for canning		Consumed as fresh beef[b]
						Weight	Proportion of supply	
	thousand	million pounds	pounds	million pounds	million pounds	million pounds	per cent	million pounds
1958	2,437.6	1,220	500.5	(−37)	1,183	19.4	1.6	1,164
1959	2,261.3	1,153	509.9	6	1,159	16.7	1.4	1,142
1960	2,471.3	1,266	512.3	5	1,271	20.1	1.6	1,251
1961	2,510.9	1,303	518.9	(−7)	1,296	20.7	1.6	1,275
1962	2,503.6	1,308	522.4	10	1,318	19.1	1.4	1,299
Average	2,436.9	1,250	512.9	(−5)	1,245	19.2	1.5	1,226
1980 projection	4,600	2,440	530	0	3,440			

[a] Imports of beef and veal less exports. If exports exceed imports this is expressed as a negative quantity in brackets.
[b] Adjustment for stock changes would give greater precision but has an insignificant effect, as beef stocks vary little in relation to total annual supply.

Table 4.—Beef and Veal Disappearance, 1958-62 and Projections for 1980

		1958–1962 average	Projections for 1980
Total beef and veal consumption	million pounds	1,348	2,565
Veal consumption	million pounds	122	125
Beef consumption	million pounds	1,226	2,440
Average beef carcass weight	pounds	511	530
Number of beef carcasses	million	2.4	4.6
Number of calves slaughtered	million	1.1	1.1
Total exports, live cattle and calves	million	0.5	0.6
TOTAL slaughter and exports	million	4.0	6.3

Required Number of Cows.—In the 1958-62 period Canadians slaughtered or exported an annual average of 4.0 million head of beef cattle and calves a year, from an average inventory of 5.2 million cows.[1] (Table 5). In other words, 1.3 cows were required on farms for each animal slaughtered or exported.

The number of cows on farms exceeded the number of cattle slaughtered and exported per year for the following reasons:

1. Annual calf crops fall considerably short of 100 per cent and probably average about 80 per cent of the total number of cows (including heifers two years old and over).
2. There is some loss of animals of all ages through disease and accidents.
3. When the cattle inventory is increasing the number of heifers used for replacement exceeds the number of cows slaughtered by at least the increase. From June 1, 1958 to June 1, 1963 the number of cows increased by 0.36 million or about 1.4 per cent a year.

The proportion of beef and dairy cattle has little, if any, effect on the ratio of number of cattle slaughtered and exported to number of cows on farms. Dairy cows are normally slaughtered for beef purposes when replaced, and dairy type calves not retained for herd replacement are used for either veal or beef. Thus, all cattle eventually end up as beef or veal.

Table 5.—June 1, Cattle Inventories, 1958-62, and Projections for 1980

Year	Class of Cattle					Total
	Cows			Total, mature 1+2+3	Young stock	
	Milk 1	Beef 2	Bulls 3			
	— thousand head —					
1958	3,028.0	2,011.5	257.8	5,297.3	5,692.7	10,990.0
1959	2,954.7	2,101.6	255.1	5,311.4	5,746.6	11,058.0
1960	2,964.8	2,158.8	255.0	5,378.6	5,958.4	11,337.0
1961	2,986.8	2,341.0	257.5	5,585.3	6,348.5	11,933.8
1962	2,955.5	2,419.3	253.2	5,628.0	6,447.0	12,075.0
1958–62 average	2,978.0	2,206.4	255.7	5,440.1	6,038.7	11,478.8
1980 projection	3,000	4,900	300	8,200	9,800	18,000

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[1] This is based on June 1 figures but there is little variation in cow numbers with season.

Looking forward to 1980 some improvement in the size of calf crop relative to cow numbers may be expected. Likewise, there may be some reduction in disease losses. Thus, it may be expected that about one animal will be slaughtered or exported for each 1.25 head of cows on Canadian farms. As slaughter plus exports in 1980 are forecast at 6.3 million head, 7.9 million cows will be needed to produce enough calves to allow for the forecast level of beef production. This will represent an increase of 2.7 million, or 52 per cent, in the number of cows.

Required Number of Bulls.—In the 1958-62 period the number of bulls in Canada averaged 0.3 million a year. With a 52 per cent increase in the number of cows by 1980, a similar increase might be expected in the number of bulls. However, the use of artificial insemination techniques is likely to increase and, if it does, little, if any, increase in the number of bulls may be required. Consequently, the number of bulls for 1980 is forecast at 0.3 million.

Required Number of Young Stock[1].—In the 1958-62 period the total June 1 inventory of cattle averaged 11.5 million head a year of which 5.5 million were mature animals and 6.0 million were young stock. Thus, there were 1.1 times as many young stock as mature cattle. Looking forward to 1980 the following factors are likely to affect this ratio:

1. The proportion of veal calves to total slaughter and export is expected to decline from 1.1 out of 4.0 million to 1.1 out of 6.3 million or, from 28 to 16 per cent. This will result in a larger proportion of the calf crop being on farms at the time of the une 1 survey and thereby tend to increase the ratio of young to mature animals in the cattle inventory.

2. Slaughter cattle will, on the average, be brought to market weight at an earlier age. It seems quite probable that the average length of time required to produce a thousand-pound steer will be reduced by as much as one month. This will tend to reduce the proportion of young stock in the cattle inventory.

Taking both of the foregoing factors into consideration it is expected that the ratio of young stock to mature cattle will increase to 1.2 by 1980 as compared with the present ratio of 1.1. This ratio would lead to an inventory of 9.8 million head of young cattle in 1980.

Total Cattle Inventory.—Summarizing the foregoing figures, the cattle inventory in 1980 as compared with the 1958-62 average will be as follows:

	1958-62	1980	Increase, per cent
	— million head —		
Cows	5.2	7.9	52
Bulls	0.3	0.3	0
Young stock	6.0	9.8	63
Total	11.5	18.0	57

The foregoing forecast was confirmed by two other approaches to estimates of the cattle inventory in 1980. In one of these the dairy cattle inventory and the beef cattle inventory were projected separately. The resulting forecast was that the dairy cattle inventory would remain unchanged at 5.7 million head and the entire increase in beef supplies would come from the beef herd. It was also forecast that the ratio of beef cattle inventory to number of beef animals (excluding veal calves) slaughtered and exported would decline from 3.6 : 1.0 in 1958-62 to 3.2 : 1.0 in 1980. This resulted in a forecast beef cattle inventory of 12.5 million head and a total cattle inventory of 18.2 million head.

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[1] Calves and yearlings.

The other approach consisted of an analysis of the trend in output of beef and veal per head of cattle on farms. This output rose from an annual average of 101.4 pounds in 1938-42 to 132.2 pounds in 1958-62, an increase of 30 per cent. A 30 per cent increase from 1960 to 1980 would indicate that an output of 170 pounds of beef and veal per head of cattle on farms would be attained by 1980. This figure was considered to be too high. The size of the dairy herd declined between 1938-42 and 1958-62 and this may have been a major factor in the increase of estimated efficiency of beef production. The number of dairy cattle is unlikely to be much lower than at present by 1980 but the proportion of beef cattle in the national herd will undoubtedly increase. Further improvements in the management of beef herds will lead to increased calf crops, reduced mortality and attainment of given carcass weights at earlier average ages. Thus, a yield of 150 pounds of beef and veal per animal on farms in 1980 seems quite probable. This would indicate that a national herd of 18.1 million head would suffice to produce 2,565 million pounds of beef and veal plus 600,000 head of cattle for export. We assume, in this approach, that the exported cattle will be sold at an average live weight of about 500 pounds, which is equivalent to a carcass weight of about 250 pounds.

Forage Consuming Animal Units.—For estimates of forage consumption a cow is taken as one animal unit. A dairy cow in lactation requires about 1.5 times the quantity of nutrients that a beef cow does. However, in good dairy practice most of the added nutrients are provided in grain and other concentrates so that the forage and pasture requirements of beef and dairy cows are not much different.

Young stock generally include calves and yearlings. The forage requirements of young stock would range from zero, in the case of a new-born calf, to roughly those of a cow for a thousand-pound yearling. Because of this range the Committee have estimated young stock to average 0.5 forage-consuming animal units each.

The number of horses in Canada has been declining, averaging less than 600 thousand a year in 1958-62, and was 448 thousand in 1963. This decline in numbers is nearing its end and it is estimated that there will still be 400 thousand horses in 1980. Although a heavy draft horse may consume much more forage than a dairy cow most horses are now of the lighter type. Consequently, the Committee have used 1.0 forage consuming unit per horse. Sheep numbers on June 1 in Canada in 1958-1962 averages 1.6 million a year. Little change in Canadian sheep numbers is expected by 1980. Six sheep require as much forage as one cow.

On the basis of the foregoing forecasts the number of forage-consuming animal units will increase from an average of 9.4 million a year in 1958-62 to about 13.8 million in 1980. (Table 6). This is an increase of 49 per cent.

Table 6.—Forage Consuming Animal Units, 1958-62 Average, and Projections for 1980

Types of livestock	1958–1962 average		1980 projection	
	Number	Animal units	Number	Animal units
	— million —			
Mature cattle	5.5	5.5	8.2	8.2
Young stock	6.0	3.0	9.8	4.9
Horses	0.6	0.6	0.4	0.4
Sheep	1.6	0.3	1.6	0.3
TOTAL	13.7	9.4	20.0	13.8

Land Required for Forage Production.—The land utilized for pasture and forage production in Canada varies greatly in productivity. In 1961 there were 42.1 million acres of unimproved pasture, most of which had a low-carrying capacity. There were also about 24.0 million acres of improved pasture and land in forage crops which, because of differences in soils, climate and management, varied greatly in productivity. For the following analysis we have assumed that one acre of improved forage land is equivalent to 5.5 acres of unimproved pasture[1]. Because of the wide variation in productivity of both types of land, this should be recognized as a crude comparison of relative productivity. On this basis, the land used to supply forage in 1961 consisted of the following:

	Million acres
Unimproved pasture, in terms of improved pasture equivalent[a]	7.7
Improved pasture	10.2
Forage crops[b]	13.8
Total	31.7

[a] 42.1 million acres of unimproved pasture.

[b] Includes oats for hay and corn for silage as well as forage crops of all types.

As already noted, it is forecast that there will be an increase of almost 50 per cent in forage-consuming animal units between 1958-62 and 1980. Thus, it would seem that the added quantity of improved forage land required will be about 15.8 million acres.

Part of this land requirement may well be met through improved management of land now utilized for forage production. The 42.1 million acres of unimproved pasture include 28.0 million acres of range land. The carrying capacity of some of this land could be doubled by such management practices as re-seeding and use of supplementary cultivated pasture in certain seasons. It is estimated that such improvements will probably increase the carrying capacity of range land by 20 per cent from 1961 to 1980. This would provide the equivalent of 1.0 million acres of improved pasture. Owing to ignorance of the nature of the remaining 14.1 million acres of unimproved pasture, we have made on projections of productivity, except insofar as some of this unimproved pasture may be converted to cultivated land.

There is also scope for increased productivity of improved pasture, arising from such advances in management practices as drainage and increased use of fertilizers. It seems that a 10 per cent increase in productivity per acre of improved forage land by 1980 is probable. Such an increase on present acreage would be equivalent to 2.4 million acres of improved forage land.

Adding together the forecast gains of productivity in unimproved pasture and improved forage land, it would seem probable that improved management of land now used for forage production will reduce land requirements by 3.4 million acres. This would leave a net addition to improved forage land of 12.4 million acres to be provided. However, the improved management practices of 1980 will be applied to the new as well as to the old forage land. Consequently, about 11.0 million acres is a more realistic forecast of the required addition to land used for forage production by 1980, if the forecast increase in beef production is to be achieved.

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[1] "It is doubtful if all the wild pasture lands do or can provide more grazing than the 10 million acres of improved pasture". Leahey, A., Appraisal of Canada's Land Base for Agriculture, Resources for Tomorrow, Volume 1, 1961, p. 50. Dr. Leahey, lacking data of the 1961 census, had estimated wild pasture acreage at 55 to 60 million.

Feed Grain Requirements.—The Dominion Bureau of Statistics each year prepares estimates of the number of grain-consuming animal units, to arrive at an estimate of the adequacy of feed grain supplies. For the purposes of this estimate, a dairy cow is 1.0 animal unit and all other cattle average about 0.5 animal unit each. In recent years, feed grain utilization has averaged about 0.90 ton per grain-consuming animal unit. On this basis cattle on Canadian farms, other than milk cows, have been consuming about 0.45 ton of feed grains per head. Little change is expected in the quantity by 1980. There will probably be some improvement in efficiency in feeding grain to livestock but this may be offset by a tendency to substitute grain feeding for forage, to attain market at an earlier age. Consequently, it is forecast that 0.45 ton of grain will be fed per head of cattle other than milk cows in 1980.

The increase in number of cattle other than milk cows is expected to be 6.5 million head. Thus, the increase in feed grain requirements for beef production will be 2.9 million tons.

From 1958 to 1962 annual yields of oats and barley, in Canada, averaged 39.3 and 26.6 bushels per acre respectively. Both of these yields amount to about 0.65 ton per acre. Some upward trend in feed grain yields is to be expected and a 15 per cent increase to 0.75 ton per acre by 1980, through a more general application of known techniques, seems likely. Thus, it should take about four million acres more to produce the additional feed grain required.

Summary.—Canadians, according to our forecast, will consume 2,565 million pounds of beef and veal in 1980. Of this amount, veal, a by-product of the dairy industry, will account for about 125 million pounds, leaving beef requirements of 2,440 million pounds. About 4.6 million beef carcasses or 2.2 million more than the annual average number used in 1958-62, will be required to provide this meat. To produce this beef and provide for exports of feeder cattle the number of cattle on farms at June 1, 1980 is forecast at 18.0 million head, an increase of 6.5 million. It is expected that about 15.0 million additional acres of land will be required to feed these 6.5 million cattle, after allowing for the effects of improved cultural practices.

AGRICULTURE AND ECONOMIC DEVELOPMENT

E. JASKA

The problem of economic growth, the central economic problem of our time, is particularly acute in the many underdeveloped countries of the world. Progress is hampered by the lack of capital and of technical and managerial skills, and by the progressive deterioration in the balance of trade vis-a-vis the developed countries. The rapid growth of population in most underdeveloped countries has tended to cancel out any advances that were or could have been made. In fact, the "gap" between the advanced and the developing countries is widening rather than closing, thereby leading to a situation fraught with the gravest dangers.[1]

The real meaning of the widening "gap" between the developed and developing countries could be demonstrated by a review of data on the current food and income situation.

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[1] United Nations Review. Vol. 9, No. 11. New York, November 1962.

According to the Third World Food Survey published by FAO in 1963, the per caput world food supply is now slightly above the prewar level.[1] However, most of the progress over the last decade, has been made in the developed areas, and the gap between the developed and the less developed areas has tended to increase rather than to decrease. In other words, although the rate of growth of total world food production has been slightly greater than the rate of increase in total population, this seemingly brightening picture is blurred by a lagging or worsening situation in too many parts of the world. The slight edge of production over population—two per cent for production and 1.6 per cent for population, on the average, for the world, in the past few years—is not evenly distributed. Spectacular gains in production have been made by countries already struggling with the problem of agricultural surpluses, while in many low-diet regions population either is catching up with production or has actually taken the lead. FAO reports that food production in Latin America and the Far East has only barely, if at all, regained prewar per caput levels. In the Far East, population is up 40 per cent, while food production has increased only 37.5 per cent (Mainland China excluded).

One of the broad conclusions of the Survey is that the world's over-all food supplies today provide only about three-fourths of what is essential for a healthy, active life. The deficit is particularly large in livestock products which provide only about 60 per cent of what is nutritionally desirable. The deficit for the different subregions ranges from 15 to 30 per cent in over-all food supplies and from 20 to 45 per cent in livestock products. As a direct result, 10 to 15 per cent of the world's people are still undernourished and up to half of the people suffer from hunger or malnutrition.

Despite the increasing efforts made by various developed nations to step up the economic development process in the low-income countries, and efforts made by the developing countries themselves, the income gap between the two groups is also steadily widening. In 1962, for instance, the GNP, for the 470 million people living in the 20 OECD Member countries averaged $1,900 per caput. This contrasts with an estimated average figure of some $130 per caput for the people, about 1.4 billion, living in the non-communist less-developed world.

In the OECD countries, projected growth rates of real product (4.4 per cent), after allowing for a population increase of 1.2 per cent, represent an average increase of some $60 a year in income per head of population. Growth is estimated as progressing at only a slightly lower rate, that is, at about four per cent a year in the less-developed countries. But the resulting increase in income per caput is only about $3 a year, after adjustment for an annual rate of population growth of about two per cent. Thus, measured in terms of absolute income, the more-developed nations, because of their greater income base, are advancing by income increments about 20 times greater than those of the less-developed countries.[2]

About half of the growth in real product in the developing countries is affected by the increasing numbers of mouths to be fed. Between 1962 and 1970, for instance, the population of the developing countries is expected to increase by 300 million. This increase equals the combined population of the United States, France, and Britain, today; the total income of the less-developed parts of the world will thus have to increase by almost $40 billion (present aggregate incomes amount to about $180 billion) merely to maintain current per caput income levels.

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[1] FAO. Third World Food Survey. Freedom from Hunger Campaign. Basic Study No. 11. Rome 1963.

[2] Fine, Sherwood M. Economic Growth in the Less Developed Countries. In: The OECD Observer, No. 5. Paris, August 1963.

The problem of poverty in the developing countries is essentially one of underproduction, underemployment and underconsumption. The causes are complex, and the remedies call for drastic changes in the whole range of economic activities and in the social outlook of the community.

It is now commonly accepted that in the developing countries the process of economic development must start with agricultural development, since no genuine revolution in economic growth can be achieved without a marked improvement in farming. Development capital has to be generated in the countryside, because the bulk of the population lives on the land, and bulk of the wealth comes from agriculture in the early days. Increased farm productivity alone can create the surplus needed for transfer to other growing sectors of the economy, and it will raise the level of farm incomes. Prosperity also enables the farming population to provide a growing market for industrial goods.

Some Characteristics of Agriculture in Developing Countries.—Low income and the preponderance of agriculture as an occupation and a source of income are the common denominator of the developing countries. Economic development in the world as a whole is thus closely linked to the agricultural situation in the developing countries.

According to the FAO, the diversity of natural, economic, and social conditions in agriculture, in the developing countries, is so great that at first sight it may be questioned whether any general discussion can be meaningful. Natural conditions range from the hot, wet lands of the tropical zone, and a large area under forests, to the arid zones of, e.g., the Near East and Central Asia, with hard, dry soils, vast deserts, steppes and mountain areas, and strong contrasts of winter and summer temperatures. Soil types, topography, and natural vegetation extend over an equally wide range.[1]

Problems of agricultural development are also greatly influenced by the great differences in the density of the rural population, ranging from the crowded river basins of India, Pakistan, and Viet-Nam and some of the densely populated Caribbean Islands, to the sparsely inhabited areas of Central Africa and Brazil. Social and institutional conditions, as well, vary widely among developing countries. There are great differences in educational levels and degrees of literacy, in political institutions, consumption habits, religious beliefs, land tenure systems, etc., which have a considerable bearing on agricultural development.

Despite these diversities there are many common factors that may help clarify the relevant problems. In general, agriculture is the main occupation and average incomes are nearly always lower in agriculture than in other occupations. Moreover, there is a very uneven distribution of agricultural income. In Chile, for example, in the middle of the last decade, the agricultural-employer sector, which represented 12 per cent of that country's total agricultural active population, had an average income 14 times higher than that of the agricultural-worker sector.[2] Research work done by the Ministry of Agriculture of Chile in the large agricultural commune of San Vicente de Tagua-Tagua indicates that the total income of the local agricultural workers, taking account of all forms of remuneration (including consumption of produce from their own farms), was insufficient to guarantee a minimum balanced diet, irrespective of other expenditure.

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[1] FAO. The State of Food and Agriculture 1959. Rome 1959. pp. 134-136.

[2] Agriculture in Latin America: Problems and Prospects. In: UN Economic Commission for Latin America, Tenth Session. Mar del Plata 1963.

Within the group of semi-urban or semi-rural countries, the cases of Cuba and Brazil may be cited. A survey carried out in Cuba, in 1956, indicated that, in contrast with the average annual income of about $370 per caput, recorded for the country as a whole, the average income of the rural population was only $92. A similar situation prevails in Brazil. The average national income per active person is about $110 in the agricultural sector and $440 in the non-agricultural sectors; but in the Northeastern region, where about one-third of Brazil's total population is located, and where almost 80 per cent of the people live in rural areas, the over-all average falls to about $85 a year, and that for agricultural workers in the sugar-growing areas drops to about $50.

In the pre-eminently rural countries of Latin America the economic situation is certainly no better for the broad masses of the rural population. Data concerning Ecuador may serve to illustrate the situation.

In a study carried out by the Institute of Anthropology and Geography of Ecuador in 1959 it was found that the average income, including both cash wages and payments in kind, of the huasipunguero population (agricultural laborers who have to work for a certain number of days a week on farms in the sierra) ranged from 11 to 27 cents a day, and the daily wage for unattached laborers (not entitled to remuneration in kind) averaged a little below 40 cents for the ten sierra provinces. Assuming that each household consists of three persons, average income per caput is less than 15 cents a day.

To illustrate rural living conditions in developing countries, we may also use India as an example because the lot of the Indian peasant is typical. According to P. G. Hoffman, the first managing director of the United Nations Special Fund,

> "The Indian peasant lives in a village of mud huts. He has few contacts beyond the next village; few roads exist and when they do they are usually nothing more than cart tracks over difficult terrain and in poor condition. If he is lucky—and nearly 40 per cent of India's 200,000,000 rural population are not—he has land. His three acres may be in two or three or perhaps six widely separated plots. They are among the most unproductive cultivated areas in the world. The peasant cannot afford fertilizer, better seed, power machinery or any but the most primitive farm tools. The annual income from the land for his family of six will be about $200, of which a third will be owed to a moneylender. He will pour his energies into this land to get back from it barely enough for him and his family to eat.
>
> If the economic outlines of his life are harsh, the other aspects are harsher still. For a bed he often uses a straw pallet or perhaps the raw earth. For fuel with which to cook his meagre meals, he uses dried cow dung. The water he drinks is carried by his wife or children from a village well of doubtful purity. All the clothes he owns, he wears. He can neither read or write, and it is only recently that his children have been given the hope of learning. Malnutrition and illness are rife. If he gets sick, there is no doctor for him. He and his wife expect that half of their children will be dead before they reach the age of six. Any member of his family could consider himself fortunate if he lived to be 40 years old. Seventy-five per cent of India's people share his lot. Ghandi described the Indian peasant's life as an "eternal compulsory fast". These Indian peasants constitute 20 per cent of the agricultural and rural people of the entire world."[1]

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[1] Hoffman, Paul G. Bread Upon the Waters. In: World Without Want. By Hoffman, Paul G.; David Owen, William C. Baggs; 1962 by Encyclopedia Britannica, INC.

Transportation, communications, and marketing systems are usually poorly organized in developing countries. The primitive methods of farming keep productivity at a low level and frequently lead to the deterioration of the soil and of other natural resources. Limited agricultural resources and knowledge, together with concentration on a few basic commodities, often result in lack of productive employment for fairly long periods between the seasons when work on crops is required. There is therefore chronic underemployment or, especially with regard to the landless agricultural worker, unemployment in rural areas. Credit at reasonable rates of interest, if available at all, usually meets only a small fraction of the needs for funds to finance improvements of agricultural practices, or to provide essential consumption loans in times of adversity.

The Role of Agriculture in Economic Development.—The current interest in policies to foster economic growth has resulted in an enormous amount of contemporary theorizing and investigation. However there has not emerged from all this activity any single analytic framework or set of principles that provide a comprehensive and definite theory of economic growth. However, our understanding of the processes of economic growth and the relative importance of different factors to this process has been notably advanced.[1]

As in all new branches of study, there have been marked conflicts of opinions. for example, one important school of thought has given priority to industrialization as the most effective way to break the vicious circle of underdevelopment. And, despite the fact that agriculture in developing countries contributes between 40 and 60 per cent of the national income and employs from 50 to 80 per cent of the labor force, this "big push" school of development economists assigns to agriculture a very secondary role. Unfortunately, it is to their voice that the leaders of emergent countries have mainly listened. This has led to the relative neglect of agriculture, and this is now being recognized as a serious error in many countries.

More recently, the "balanced growth" school has gained ground, having been reinforced by some excellent theoretical contributions. The result has been to elevate the agricultural sector to a more important, in fact, primary position in the promotion of sustained economic growth. The analytical contributions have formally shown, among other things, that "the generation of an agricultural surplus is a pre-condition for the development of manufacturing."[2] From a pragmatic standpoint, on the other hand, it has been shown that a productive agriculture can contribute to economic development most effectively.

The major roles agriculture has to play in promoting economic growth can be summarized as follows:

(*a*) Agriculture must supply the food required by rapidly expanding urban populations in the developing countries. If the demand is not met, there may be hunger—even starvation; or food must be acquired from abroad, which depletes the foreign exchange needed to import industrial equipment and raw materials.

(*b*) Agricultural expansion is required as working capital for non-agricultural development—to generate raw materials for industry, to earn foreign exchange, and to free labor from agriculture and make it available for industrial construction and operation.

(*c*) A rise in agricultural incomes stimulates other aspects of development. It provides the capital accumulation needed for further growth, through

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[1] Economic Research Service. USDA. Agriculture and Economic Growth. Agricultural Economic Report No. 28. Washington, D.C. 1963.

[2] Jorgenson, Dale W. The Development of a Dual Economy. In: Economic Journal. June 1961.

> savings required for investment or as a critically important source of increased tax revenues. It also provides expanded markets for industry—chemical fertilizers, agricultural equipment, and manufactured consumers' goods.[1]

Agriculture, however, is also conditioned by the development of other sectors of the economy. Agriculture cannot expand, if the export demand remains unchanged, unless a growing urban population with rising levels of living absorbs larger quantities of raw materials, and, above all, food. Since food and other farm products account for a large part of the total movement of foods, thus urban market will, to a great extent, provide the economic basis for improved transport and communications. Moreover, industrial employment opportunities check the growth of the farm population, or may reduce the number of people on the land and lead to conditions facilitating increases in agricultural productivity. Agricultural production can be expanded more readily, too, with an adequate supply of the means of production (fertilizers, machinery and other equipment, power, etc.) which industry produces. Consumer goods, originating in the industrial sector, encourage the farmer to raise his output and income. In certain circumstances, the agricultural sector cannot be built up unless investment funds flow into it from the industrial sector. Moreover, if either agriculture or industry attempt to expand in isolation, they will soon be and may, among other annoyances, run into balance-of-payments problems.[2]

Agriculture Development and Food Needs.—As indicated before, the developing countries have from 60 to 80 per cent of their people engaged in agriculture and these people produce from 40 to 50 per cent of total national product. Since average agricultural production per person is low, average income per person is also very low. With little opportunity for savings from incomes at subsistence levels, and with scarcely any educational facilities for the masses, the people lack both the necessary capital and the technical and managerial skills to improve their production and increase their incomes. These conditions lead to inefficiency in the use of both land and human resources, and limit the contributions of each country's own agricultural sector to national economic growth.

Despite the voices of pessimism, there is no doubt that a considerable advance has been made by the underdeveloped countries in the postwar period. Over the last 15 years their industrial production has risen 2.5 times and agricultural production by almost 40 per cent.

But the development problems are still huge problems. According to a recent FAO study, serious problems continue to affect world's agriculture during the 1960's. For instance, to reach the UN Development Decade's target of an annual rate of growth of five per cent in GNP in the developing countries, their agricultural production will have to increase by at least four per cent a year. However, in the 1950's, agricultural production hardly increased by three per cent a year and most of this rise was due to larger areas rather than higher yields. Since the potential for further extensions in area is limited, especially in the Far East, yields will have to rise about twice as fast in the 1960's as in the 1950's, for a four per cent increase in agricultural production. Such an achievement would require greater inputs of fertilizers, irrigation, farm tools, etc. It would also require stronger economic incentives to raise production as, for example, stabilization of farm prices, institutional changes and marketing improvements. But, above all, it would require a large human investment in the form of better education and training. Only on these conditions could substantial progress in the fight against hunger be made within the next decade. In the Far East, for example, where hunger is most widespread, the average per caput calorie intake could be expected to rise by almost 15 per cent in the 1960's and reach a level close to the average calorie requirement considered necessary for normal active life. However, malnutrition would remain the lot of hundreds of millions of people and per caput intake of animal proteins in the Far East by 1970 would still be less than one-fourth of the present level in Western Europe.[1]

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[1] Rostow, Walt W.; Agriculture's Role in Economic Development, In: Foreign Agriculture. USDA. Washington, D.C. September 2, 1963.

[2] United Nations. Development and Planning in Asia and the Far East. Vol. VIII, No. 3. November 1957. p. 23.

To promote economic growth, agriculture must supply the food required by a rapidly growing population in the developing countries. The total current food deficit in developing countries is already large and it is expected to grow.

According to a study by the U.S. Department of Agriculture in 1961, it required 1.1 billion bushels of wheat, 7.0 billion pounds of vegetable oils, 3.5 million bags of dry edible beans and 3.3 billion pounds of dry milk to bring the world budget into balance. Converting these quantities to dollar values, the food deficit in the developing countries was about $3.4 billion in 1960. That study also showed that, with rapid over-all economic growth, the food deficit in the developing countries would increase to about $27 billion by 1980.[2]

The reasons why the food deficit is expected to rise, are well described in the FAO report on its Third World Food Survey.[3] This report states that if world population were to grow according to the United Nations medium projection (1975—3.94 billion; 2000—6.4 billion), by 1975 world food supplies would have to be increased by over 35 per cent merely to sustain the world's population at its present unsatisfactory dietary levels. To bring about a fair degree of improvement in nutrition levels, world food supplies would have to increase by over 50 per cent and, in particular, supplies of animal food products would have to increase by some 60 per cent. In the less developed areas where population increase will be faster, the corresponding figures are much higher. In these areas total food supplies will have to increase by some 80 per cent and those of animal foods by over 120 per cent. For the world as a whole, total food supplies in 1975 would have to increase by around 35 per cent in cereals, 85 per cent in pulses, and 60 per cent in animal products, and in 2000 by some 110 per cent in cereals, 225 per cent in pulses, and 210 per cent in animal products. The over-all change in the world's total food supplies needed to achieve the short-term target (2,550 calories a day) by 1975 and the long-term target (2,600 calories a day) by the year 2000 are 51 per cent and 174 per cent respectively. However, the necessary increase in food supplies may well be greater because of inequality of distribution between countries. In other words, should the world population grow according to the United Nations medium projection, its total food supplies would have to increase by well over a half by 1975 and threefold by the turn of the century, to provide a satisfactory level of nutrition.

Thus, every effort must therefore be made to raise farm production in the areas where food deficits are expected to be most acute.

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[1] FAO. Committee on Commodity Problems. Problems Emerging from the FAO Projections for 1970. CCP 63/7/2, Rome, February 4, 1963.

[2] Cochrane, Willard W.; Arthur B. Maikic; and Grover C. Chappell. Potential Uses of Farm Products as Aid to Developing Countries. (Presented before the Annual Meeting of the American Farm Economic Association, Minneapolis, August 1963).

[3] FAO. Third World Food Survey. Freedom from Hunger Campaign. Basic Study No. 11. Rome, 1963.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Towards a Dynamic Development Policy for Latin America. U.N., New York. 1963. pp. vi+103. Price: $U.S.1.00.

As stated in the Foreword by Raül Prebisch, Secretary of the Economic Commission for Latin America,

> "The report presented here constitutes by its very nature a fabric of inevitable generalizations drawn from continuous and systematic analysis of the real state of affairs in Latin America. But they do not relate to any individual country or group of leaders, since the divergencies that would have to be noted are many and significant.
>
> Nevertheless, it is our hope that within the pattern of this fabric each country may find a clue to the significance of its own special case, at this time of imperative need to consider what our past has been what our present is, and what we should wish to make of our future through the exercise of deliberate control over the forces of economic and social development."

Part A, The General Thesis, insists on the need for structural reforms and a changed outlook to clear the way for development. Part B, Internal Structural Factors, discusses the weaknesses in Latin America's development and reviews the operation of the economic system in relation to the social structure. Part C, Development and the External Bottleneck analyses disparities in international demand and their effects on economic development and is concerned with the obstacles to the establishment of a Latin America Common Market which "has become an imperative need as another means of correcting the trend towards an external bottleneck and promoting the economic viability of the industrialization process."

The report ends on a note of hope for the future and a call for decisive action. Difficulties "must be tackled in all fields, and discouragement, indifference and defeatism must not be allowed to gain ground among those who fail to grasp the true significance of what is going on. The course of events cannot be halted, for on the horizon glimmers the dawning of a new will to achieve—perhaps in the not too distant future—what at present is left undone, in a futile endeavour to perpetuate all that must be demolished because it no longer meets dynamic requirements. Let us demolish it with our own hands and in our own way, now, when victory beckons impatiently to Latin America and offers it, in the midst of a world of antagonisms and anomalies, a unique opportunity to build anew, and to set its own vigorously authentic stamp on the ineluctable and sweeping process of change."

Statistical Yearbook, 1963. Department of Economic and Social Affairs, Statistical Office of the United Nations. 15th Edition. New York. 1964. pp. 714. Price: clothbound, $U.S.11.50; paperbound, $U.S.9.00.

For the reader unfamiliar with the Statistical Yearbook here is a list of the chapters in the 1963 edition: World summary, Population, Manpower Production, Agriculture, Forestry, Fishing, Mining, Quarrying, Manufacturing, Construction, Energy, Consumption, Transportation, Communications, Internal trade, External trade, Balance of payment, Wages and prices, National income, Finance, Public finance, Social statistics, and Education, culture.

According to the S.Y. gains in agricultural production in 1962 were not as large as increases in industrial production. Nevertheless, the farmers of the world produced more wheat, corn, barley, and rice than in 1961. The total consumption of fertilizers rose to a record level of 32.3 metric tons and was eight per cent higher than in 1961.

The value of world exports reached a record level of $U.S.140,900 million; it exceeded the figure for 1961 by 5.5 per cent and was six times greater than the figure for 1938.

The industrial output of the U.S.S.R. and of the eastern European countries was 3.75 times greater than in 1950. In the other European countries industrial output rose by 98 per cent. Comparable figures for other regions were: 140 per cent for the European Economic Community, 59 per cent for Canada and the United States, and 95 per cent for Latin America. The countries of Asia, paced by the economic recovery and growth of Japan, exceeded all regions in growth rates and their industrial output multiplied four times in the 1950-62 period.

The advanced countries of western Europe, Canada, the United States, Australia, New Zealand, and South Africa retained their position as the most important suppliers in the world market for manufactured goods, especially machinery, and were assuming an increasingly important role as suppliers of food and raw materials.

The population of the world rose to 3,135 million by mid-1962, from 2,893 million in 1958 and 2,509 million in 1950. Asia (excluding the U.S.S.R.) comprised 1,764 million, Europe 434 million, North and South America 430 million, Africa 269 million, the U.S.S.R. 221 million and Oceania 17.2 million.

Statistical Bulletin for Latin America. Vol. 1, No. 1. Economic Commission for Latin America, Santiago, Chile. Published by the U.N., New York. 1964. pp. 242. Price: $U.S.3.00.

This Bulletin will, beginning with this first issue, replace the Statistical Supplement to the Economic Bulletin for Latin America. It retains most of the statistical series that appeared in the various issues of the Supplement and introduces new Tables for international trade. This periodical is wholly bilingual (Spanish and English).

OTHER PUBLICATIONS

The Indians and Metis of Northern Saskatchewan. A Report on Economic and Social Development. Buckley, Helen; J. E. M. Kew, and John B. Hawley. Centre for Community Studies, Saskatoon, Saskatchewan. 1963. pp. 114+photos. Price: $1.00.

The Department of Natural Resources of the Province of Saskatchewan is concerned with the development of natural resources and with the improvement of social, economic, and cultural conditions for the northern people in its Northern Affairs Region. To gain a better and more complete understanding of the nature of the tasks involved, it did, in February, 1960, enter into an agreement with the Centre for Community Studies to undertake a research project on "factors affecting the social and economic development of northern settlements."

The present report, as stated in the Foreward, by W. B. Baker, Director of the Centre, "attempts to provide, in addition to a description and analysis of facts, a workable plan of action for the guidance of provincial authorities". It is organized into two parts. The first one presents the results of the research work, tracing the history of the changes in the way of life of the Indians and Metis people, describing present-day conditions especially with regard to population growth and economic and social conditions, assessing the achievements and limitations of provincial northern policy, delving into the prospects for economic development, and drawing attention to the chief elements of sound development planning. The second part contains recommendations to the Department of Natural Resources on how to get a workable development plan under way. This plan, or "23-point program of development is based on a systematic study and analysis of four major industries mining, forestry, mink ranching, and agriculture—and of opportunities for employment in government service." The authors do a neat job of putting the several recommendations forward under the following section headings: Developing New Skills and Resources, New Help for Old Industries, Developing the Potential of People, and Some Estimates of Cost and Benefit.

Economic Meaning of Subsistence. Wharton, Jr., Clifton R. The Agricultural Development Council, Inc., 630 Fifth Avenue, New York. (Reprinted from The Malayan Economic Review, Vol. VIII, No. 2, October 1963. pp. 46-58).

The author deplores inconsistencies in terminology and in the definition of "subsistence economics". There is, in fact, a difference between subsistence in the "production" sense and subsistence in the "level of living" sense. To avoid confusion, Wharton advocates the use of the terms "subsistence production" when referring to the type of production and its degree of commercialization and "subsistence living" when referring to "the absolute level of living which is a minimum in the sense of survival".

After having tidied the terminological jungle Wharton goes on with his own probing of the economic meaning of subsistence. He does it under four separate headings. Under Subsistence Production he delineates four types of subsistence—simple individual or family, group or tribal, pre-industrial, and post-industrial—and describes the characteristics of each. Under Subsistence Living he draws attention to the subjective, relations and arbitrary nature of various notions of subsistence living, and to the need to stress the behavioral significance, from an economic viewpoint, of the subsistence levels of living. He meets his own challenge with A "Subsistence Living" Model in which he views the "minimum subsistence standing of living per person for any particular social aggregate—as a function of three types of variables: (1) physiologic (and nutritional) variables; (2) economic variables, especially current and previous levels of economic well-being; and (3) socio-cultural variables, in an historical and cross-cultural aspect.

Wharton ends his paper with a consideration of Some Preliminary Implications, reminding his readers that "The relevant 'subsistence man' for today's world is not the slum dweller who works for a wage in an urban area but the subsistence farmer who tills the soil for his daily bread. The 'subsistence producers' who predominates in the world today—the underdeveloped, low-income, poor or whatever term you like—is an agriculturist. And where we have a subsistence agriculturist we must recognize that there are very special circumstances surrounding his values, attitudes, motivations, and socio-economic behaviour many of which are specifically affected by his condition as a subsistence producer. Most important is the fact that life is a unity-production, consumption, marketing, capital accumulation all are one integral operation. He produces food to live and he needs food to be able to produce more. He does not make a conscious or deliberate separation between production and consumption."

France and Agriculture. Service de Presse et d'Information, 972 Fifth Avenue, New York, N.Y. 10021. December 1963. pp. 56.

A succinct but vivid description of French agriculture. The introductory chapter, The Meaning of the Agricultural Revolution in France, is followed by chapters on:

(1) The Renewal of French Agriculture—The Land and its People: The Heritage of the Past; Modernization of Agriculture; Rural Development: Planning Toward an Interregional Balance; A Forward-Looking Scientific and Technical Infra-structure; Modernized, Decentralized Outward-Looking Marketing.

(2) Agricultural Reform Gains Momentum—Land Reform; Production Orientation and Market Reorganization; Orientation of Agriculture Through Investments; Toward Social Parity: Agricultural Education and Advancement of the Peasant Farmer.

(3) France's Major Agricultural Products—Plant Products; Animal Production; The Food Industries.

(4) The Future of French Agriculture and International Trade—The Place of Agriculture in the French National Economy; The Place of French Agriculture in the Common Market; French Agriculture and the Liberalization of World Trade; France's Policy on World Market Reorganization and the Hunger Problem.

The booklet is well and profusely illustrated with pictures, and statistical tables, maps and charts.

The Role of Farmer Education in Agricultural Growth. Wharton, Jr., Clifton R. The Agricultural Development Council, Inc., 630 Fifth Avenue, New York (and Faculty of Agriculture, University of Malaya.) December 1963, pp. 20.

A paper which discusses the role of farmer education in fostering agricultural growth in the early stages of development, and the ways in which education contributed to growth.

Farm Organisation and Incomes in South West England, 1962-63. Morris, S. T., H. W. B. Luxton, and G. D. Davies. University of Exeter, Department of Economics (Agricultural Economics), Newton Abbot, Devon, England. Report No. 148, March 1964. pp. 58. Price: 5/.

An economic and financial survey of 226 farms in Cornwall, Devon and Dorset for the 1961 and 1962 crop years, and a summary of results for an identical sample of 148 farms from 1953-54 to 1962-63.

The Role of Co-operatives in the Economic and Social Development of Developing Countries.

A report prepared for the 49th Session of the International Labour Conference to be held in Geneva in 1965. International Labour Office, Geneva. 1964. pp. 63. Price: 75 cents.

This report is organized in three chapters. The first one, The Co-operative Solution to Economic and Social Problems, gives a brief review of these problems and of the co-operative approach to a solution. The second chapter, Factors Impeding Development and Conditions and Success, contents itself with only a list of some adverse factors but deals extensively with conditions for success and especially with Methods of Promoting Co-operation, under the following sub-headings:

The Legislative Framework, Technical Aid, Education and Training, Diffusion of Co-operative Ideas, Financial Aid, Use of Co-operatives to Execute Government Contracts, Systematic Use of Means of Co-operative Aid, National Co-operative Councils, and Co-operative Planning.

In Final Remarks, the last chapter, criteria are given for the assessment of the value of a long-term co-operative policy. As stated, it "should be judged on the contribution it can make to—

(*a*) the improvement of the social and economic position of people of limited resources and opportunities;
(*b*) the increase of national income and export revenues by a fuller exploitation of natural resources, especially in agriculture, forestry, and fisheries;
(*c*) the implementation of systems of land reform and of land settlement aimed at bringing fresh areas into productive use;
(*d*) the increase of employment and the retention of secondary sources of revenue in producing areas by the establishment of dispersed but fully modernized industries processing local raw materials;
(*e*) the increase of personal and national capital resources by the encouragement of thrift and the use of controlled credit;
(*f*) the improvement of social conditions and the supplementing of national social services in the fields of housing, health, communications, etc."

A Note on Feed Substitution in Milk Production. Beynon, V. H. and J. A. Langley. Department of Agricultural Economics, University of Exeter, Devon, England. Report No. 149, May 1964. pp. 15. Price: 2/6.

This note draws attention to "certain implications of the experimental evidence on forage concentrate substitution in milk production."

Guide Commercial de l'Administrateur d'une Coopérative Agricole, Sauvage, Antoine. With Foreword by Henri de Farcy, Syndicat national d'études et de recherches pour les coopératives agricoles et leurs unions. 20 bis, rue La Fayette. Paris, France. 1964. pp. 302. Price: 9.50 F + 1.50 F for mailing costs.

In this book, a sequel to his Guide Financier de l'Administrateur d'une Coopérative Agricole, published in 1962, Antoine Sauvage discusses the interplay of economic factors in the market for agricultural products.

In Part One, "La Demande, l'Offre, la Distribution" (demand, supply, distribution) he reviews the various aspects of demand and supply, for agricultural products, suggests ways to palliate the effects of irregular and inelastic supplies, describes producers' behavior, the role of the State in agricultural marketing, the organization of agricultural markets, price formation in agriculture, marketing objectives, functions and agencies, food distribution, and transport.

In Part Two, "Les Options", (alternatives) Sauvage makes a comparative analysis of various marketing methods, which he divides into two broad groups, (*a*) "vendre seul" (sale by a sole individual) and (*b*) "vendre groupés" (sales by a group of individuals). Under (*a*) he discusses the traditional, contract, and direct sales methods and under (*b*) he deals with co-operatives, the Sociétés d'Intérêt Collectif Agricole (societies of collective agricultural interest), producers' and interprofessional groups.

In Part Three, "Vendre Mieux et Vendre Plus" (better and heavier marketings) Sauvage concentrates his attention on sales promotion in agriculture and on export trade in agricultural products.

Sauvage ends his illuminating and stimulating Guide with a very well organized bibliography. In the first section of this bibliography he supplies a list of the reference works which he has used in the preparation of his guide and a list of periodicals and daily and weekly newspapers of especial interest to farmers, co-operators and other people concerned with trade in agricultural products. The second and last section is an inventory of the major articles published in recent years and relating to the main topics reviewed in the guide.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS BRANCH

S. C. HUDSON, Director-General

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G. P. BOUCHER, Editor

Published by Authority of the Honourable Harry W. Hays
Minister of Agriculture

INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935–39=100							1949=100		
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937..........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945..........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953..........	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955..........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956..........	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957..........	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958..........	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959..........	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960..........	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961..........	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962..........	240.0	240.8	195.5	286.0	272.0	290.7	234.9	130.7	126.2	186.1
1963..........	244.6	229.9	184.4	275.4	268.1	298.6	237.4	133.0	130.3	196.2
1964..........	245.4	218.3	169.4	267.2	257.5	306.9	243.4	135.4	132.4	213.6
1964										
Jan...........	246.9	215.8	167.3	264.2	263.4	299.4	242.1	134.2	131.4	210.8
Feb..........	246.1	215.9	165.6	266.2	264.8	....	....	134.5	131.3	212.3
Mar..........	245.6	215.1	164.7	265.6	265.2	....	....	134.6	131.3	210.2
April.........	245.6	215.4	165.7	265.0	265.4	309.9	244.1	135.0	131.8	214.7
May..........	245.9	219.1	170.8	267.4	267.1	....	....	135.0	131.2	209.4
June..........	245.4	227.2	180.7	273.8	273.3	....	....	135.3	132.5	211.3
July..........	244.9	223.7	179.1	268.3	271.8	....	....	136.2	135.4	210.9
August.......	245.0	220.9	172.1	269.8	248.8	311.4	244.1	136.1	135.1	214.3
Sept..........	244.3	215.9	162.2	269.6	245.6	....	....	135.6	132.7	213.5
Oct...........	244.4	214.7	163.7	265.7	241.1	....	....	135.6	131.0	214.2
Nov..........	244.7	215.8	165.9	265.7	240.8	....	....	135.9	132.0	219.8
Dec..........	246.0	220.3	175.1	265.5	243.1	....	....	136.8	133.2	221.5

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) 1964 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE WORLD FOOD PROGRAM—AN INTERNATIONAL EXPERIMENT IN THE USE OF FOOD TO AID DEVELOPING COUNTRIES

FRANK SHEFRIN[1]

Milk will be provided at a low cost (7.5 U.S. cents per liter) for 17 months to 50,000 people in Delhi. The World Food Program is making this possible by providing free dried skimmed milk which will be mixed with buffalo milk. To raise milk production in Andhra Pradesh State, India, the World Food Program is providing, for a 12-month period, maize and sorghum to mix with local feed.

The WFP will supply food at a cost of $286,000 to pay part of the wages in 1965 to 4,000 workers building drinking-water facilities and sewage and garbage-collection systems in four municipalities in each of ten Syrian provinces. Emergency shipments of 1,125 tons of maize flour, 90 tons of dried skimmed milk and some 68 tons of vegetable oil have been sent to Uganda to provide a supplementary diet for three months for 25,000 refugees from Sudan and Rwanda. The WFP gave emergency food relief worth $484,000 for victims of the July 1964 floods in northeast Brazil. This action to meet the needs of 40,000 flood victims was for a period of six months.

More than $1 million worth of food is to be sent by the WFP to help Chile resettle 10,000 persons and 21,000 animals in improved surroundings in the Province of Coquimbo. Under an agreement signed in August 1964, the food will help tide farm families over until their first crops are in, and to feed livestock until pastures are rehabilitated.

Early in August 1964, the WFP signed an agreement with the Republic of Korea to provide 1,200 tons of food to pay part of the wages of workers on flood-control projects along the Naktong River.

Nubians displaced from their land as a result of the Aswan High Dam will be helped under a new project approved by the WFP. This project is aimed at helping resettle some 38,500 Nubian villagers in the United Arab Republic whose land has been flooded by waters contained by the dam. The WFP is already providing food to help settle Nubians in the Sudan who are being forced to leave their villages in Wadi Halfa as a result of flooding from the construction of the dam. Up until July 1964 some 31,400 Nubians and nearly 17,000 head of cattle had been moved to Khashm-el-Girba 559 miles inland. Seven to eight thousand more settlers were expected to move to new villages in Khashm-el-Girba by the end of 1964. The project for the settlement of Nubians in the U.A.R. is to cost more than $1.5 million in food and feed, transport, insurance and related expenses. Some $1.2 million of food and feed will provide a partial diet to 38,500 Nubians and their livestock to be settled on 40,401 acres of land.

These are only a few examples of the many activities undertaken by the WFP to meet emergencies and to aid in social and economic development.

What is the WFP that is responsible for these various projects? It is another intergovernmental effort in the campaign to win man's freedom from want. It is an experimental program to provide food aid to be used in economic development, for a three-year period, and undertaken jointly by FAO and the United Nations in co-operation with other interested U.N. agencies and appropriate intergovernmental bodies. Its resources are provided by many countries, and the pledged commodities can be supplied to any country which is a member of the United Nations or the FAO. The Program is multilateral in that there is no direct contact between the donor and recipient country; the execution of the Program is entrusted to an international secretariat. Policies and programs are determined in concert by all interested parties—donors, receivers and third-party countries. Under the Program, a wide range of pilot projects are being tried out in various countries under diverse conditions and circumstances to test the usefulness of food aid in economic and social development.

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[1] The purpose of this article is to provide a brief descriptive outline of the WFP and a progress report on its operations to date. The author has drawn freely on documentation issued by the WFP in preparing this report. He has served as a member of the Canadian Delegation to meetings of the Intergovernmental Committee which is the executive body of the WFP.

Food aid is not new. Since World War II there has been an intensified effort to help nations increase their own food production and at the same time provide food aid. First there was UNRRA (United Nations Rehabilitation and Relief Administration) providing food on a large scale to war-devastated countries. This organization was disbanded, as countries began to recover from the effects of wartime destruction. However, progress was not so rapid as anticipated. UNICEF (United Nations Children's Emergency Fund) was next organized and its objective is to raise especially the low nutritional levels of children in the less developed countries. Next came UNRWA (United Nations Relief and Works Administration) providing food as well as other aid to Palestine refugees. In addition, there are many non-governmental organizations providing food to needy people in many countries.

On a government-to-government basis (a bilateral approach) the U.S. has operated the largest food aid program (P.L. 480). Canada as a member of the Colombo Plan has shipped food to Commonwealth countries.

The motivations behind all this food aid activity have been mixed. They have combined the genuine desire to help the less fortunate and the need to dispose of agricultural surpluses in a most useful and least painful way. At the same time it became apparent that food could be used not only to feed the hungry and raise nutritional levels but to help finance economic and social development. During this period there was also the growing concern over the impact of the large-scale U.S. bilateral food aid programs on the commercial trade of other nations.

Space does not permit a review of the various proposals put forth by the FAO secretariat and by countries, to solve the paradoxical problem of inadequate food supplies concurrent with agricultural surpluses. In seeking to alleviate the impact of surplus disposal on commercial trade and to increase the effectiveness of using such surpluses, interest centered particularly on the possibility of developing additional consumption through the use of food as an incentive payment in economic and social development. It was realized that the best way to deal with this conundrum of shortages in the midst of plenty was to experiment. The result was the World Food Program. The fact that nearly 100 nations could agree to such an experiment, were willing to delegate control of the movement of food aid and that 70 nations were willing to contribute to this program is both exciting and gratifying.

The WFP provides three types of aid:

1. Emergency food aid to meet requirements arising out of natural disasters.
2. Assisting in pre-school and school feeding.
3. Use of food to aid economic and social development.

Since the Program began in January 1963 some 70 nations—nearly two-thirds of them developing nations themselves—have contributed $93,728,060[1] toward a $100 million-goal in commodities and services and one-third in cash. Of this total, $68,517,585[2] is in the form of commodities, $5,453,667 in services and $19,756,808 in cash. The United States is the largest contributor—$50 million, of which $40 million are in commodities, $6 million cash, and $4 million in shipping. Germany is the second largest with a total of $8 million, of which

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[1] All currencies are quoted in U.S. dollars.

[2] There are almost 30 commodities in the WFP food basket. These include cereals, pulses, nuts and soybeans, butter, butter oil, dried and canned milk, eggs, fish and meat, oils and fats, sugar, cocoa and tea and feed grains; the quantities in which these commodities are available vary greatly. There is a shortage of rice, sugar and foods rich in proteins.

$1.2 million is cash, and Canada is third. Canada's initial contribution was $5 million, two-thirds in commodities and one-third in cash. In December 1964 Canada made a supplementary grant of Can.$2 million (US$1.85 million), raising its total to nearly $7 million. The food that Canada provides includes dairy products, wheat and wheat flour, fish, dried eggs and meat products. To date, as instructed by WFP, Canada has shipped food to 21 countries located in Asia, Africa, the Middle East and Latin America.

By the end of 1964 (two years after the starting date) the WFP had received and dealt with 22 requests for emergency food aid. The type of emergency food aid covered, e.g., hurricane victims in Thailand, victims of volcanic eruptions in Bali, flood victims in Syria and Brazil, cyclone victims in Pakistan and displaced persons in British Guiana, and refugees sheltering in the Congo (Brazzaville), in Uganda and Tanganyika.

During the same period some 100 projects in 50 countries, covering economic and social development projects including school-feeding, were approved, of which 50 are in operation. Fifty other project requests are under active consideration.

The WFP is administered by an international secretariat headed by an Executive Director and is located in Rome at FAO headquarters. To avoid building up a large staff during the experimental period the WFP has relied heavily on the services made available through FAO, WHO, ILO and the UN. These agencies are being reimbursed for out-of-pocket costs.

The WFP has a governing body, the Intergovernmental Committee[1], composed of 24 members, half elected by FAO and half by the United Nations. Canada is a member of this Committee. The representation is based on (a) interests—exporter or importer, developed or developing country, and (b) geographic distribution. The function of the IGC is to provide general guidance on the policy, administration and operations of the WFP. It examines programs of work and authorizes the implementation of these programs and projects. The IGC meets twice a year.

This unique experimental program ends December 31, 1965. It is up for review, and by the end of 1965 member nations of the FAO and the United Nations will have decided on the future course of this multilateral experiment in using food aid to meet emergencies and to stimulate economic and social development.

Operations

Operational Guidelines.—Once an objective is converted into an operation it becomes necessary to define the terms of reference and spell out rules. Thus, when the WFP was set up as a multilateral experiment in food aid, rules were formulated governing its operations. The rules deal with contributions, project requests, project execution and project evaluation. They are meant to safeguard the interests of both the donor and recipient countries. They provide guidance for the Intergovernmental Committee and the Secretariat. Reference is made to some of the more important guidelines in this and other sections.

Cash contributions to the WFP are made in convertible currency. Developing countries in exceptional circumstances can make their cash contributions in currencies readily usable in the WFP in agreement with the Executive Director. The cash contributions are to be paid in three equal installments. Pledged commodities and services are made available when requested by the Executive Director and are available for commitment to recipient countries for the 3-year period of the WFP. In the case of unforeseen circumstances such as domestic crop failures, the donor countries may cancel or withdraw at the end of each WFP operating year any part of their pledged contributions which has not been committed by the WFP for distribution. The Executive Director has to keep donor countries fully informed in respect to both contemplated and final commitment of commodities pledged by them.

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[1] Members of the Committee are Argentina, Australia, Brazil, Colombia, Denmark, France, Ghana, India, Indonesia, Morocco, the Netherlands, New Zealand, Nigeria, Pakistan, Thailand, United Arab Republic, U.S.A., Uruguay, Yugoslavia, the United Kingdom, Germany, Jamaica and the Philippines.

In the operation of the Program the Executive Director, if he encounters difficulties in meeting requirements for a specific commodity or service, may request contributing governments to substitute that commodity or service for some other, already pledged. A portion of the cash contribution can also be used for the purchase of essential commodities when not enough have been pledged and where such commodities may be needed to improve the nutritional balance among commodities supplied to the recipient country.

The value of contributions of commodities is computed on the basis of the world market price prevailing at the time of pledging. Should these prices change at time of delivery there will be a corresponding adjustment in the quantities to be delivered so that their current value corresponds to the sum pledged. Contributions of shipping services are similarly valued.

In determining prospective economic and social development projects the Executive Director of the WFP has to ensure that:

(a) in accordance with FAO Principles of Surplus Disposal[1] and with the consultative procedures established by the UN, commercial markets and normal and developing trade are neither interfered with nor disrupted;

(b) the agricultural economy in recipient countries is adequately safeguarded with respect to both its domestic market and the effect of development of food production;

(c) due consideration is given to safeguarding normal commercial practices in respect to acceptable services.

The consultative procedure used in respect to safeguarding commercial markets is as follows: At an early stage in the development of a plan for a project which may be of such significance as to threaten or interfere with or disrupt commercial markets or normal developing trade, the Executive Director has to consult with the countries likely to be affected. The next stage is for the Executive Director to inform the Chairman of the FAO Consultative Sub-Committee on Surplus Disposal of such plans. If questions concerning any proposed project are raised at the Sub-Committee its views are promptly reported to the Executive Director who has to take them into account before proceeding with the project.

Project Procedure.—To qualify for aid under the current World Food Program projects have to meet the following conditions:

(a) They must have an experimental value. It is intended to find out by multiple and diversified experience what impact food aid can have on economic and social development and what kind of projects, if successful, could be multiplied and extended should additional resources become available and which could be repeated on a larger scale in the same or in other countries.

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[1] These are:

1. The solution to problems of agricultural surplus disposal should be sought, wherever possible, through efforts to increase consumption rather than through measures to restrict supplies.
2. Member governments which have excess stocks of agricultural products should dispose of such products in an orderly manner so as to avoid any undue pressure resulting in sharp falls of prices on world markets, particularly when prices of agricultural products are generally low.
3. Where surpluses are disposed of under special terms, there should be an undertaking from both importing and exporting countries that such arrangements will be made without harmful interference with normal patterns of production and international trade.

(b) Projects must be completed in three years or less and in the three years results should be available so the governments can make in the light of experience decisions for the future of the Program.

(c) Projects must not interfere with normal commercial activities. Under its basic rules the food provided by the WFP must not replace the food normally sold on the local market by producers or importers.

Request for food aid under the Program must emanate from the government of the country where the project is to be implemented. A request is sent to the Executive Director of the WFP or, where there is a resident representative of the Technical Assistance Board of the United Nations in the country concerned the request is sent through him. The preparation of the request is at the initiative and on the responsibility of the governement. The UN and FAO personnel, where necessary, will assist. They are usually called upon for advice in dealing with these requests. In some cases a survey team may be sent out by the Executive Director of the WFP to assist in the preparation of the project. The Executive Director can approve and initiate various categories of projects in anticipation of the approval of the Intergovernmental Committee. Those requiring commodities of $500,000 or less can be approved by the Executive Director, those over that total must be submitted for approval by the Intergovernmental Committee.

Criteria for appraisal of requests are reflected in the model form which has been prescribed for submission of requests for WFP aid. This form has been designed to elicit information about a number of features of a proposed project which are vital to its capacity to make good use of aid. These indicate the nature and extent of benefits expected, particulars of measures or activities to be promoted, evidence of technical and economic feasibility of the undertaking, details of supplies sought from the Program, provision for meeting costs other than those covered by WFP supplies,[1] plans for handling and distribution of WFP supplies and circumstances indicating assurance against interference with trade. The questions listed can be grouped into three main categories: technical, economic, and administrative, and at each stage of project evaluation these constitute the three basic aspects which call for scrutiny. Consideration of these criteria in relation to projects demands competence in different disciplines, depending upon the particular subject matter with which the targets set by the project are concerned, such as irrigation, soil conservation, land settlement, livestock development, improvement of nutrition, road or building construction, expansion of student enrolment, community organization and welfare, or stabilization of seasonal price fluctuations.

A preliminary scrutiny of a request is first made by the Resident Representative of the United Nations Technical Assistance Board, who receives it in the country on behalf of the Program, and who may, if necessary, call in experts of United Nations agencies already available in that country to assist him in this scrutiny. Very often, as indicated above, such experts are associated with the formulation of requests for aid from their inception, since their assistance is usually enlisted for this purpose by the governments. On receipt at Headquarters, the request is examined by the WFP staff to verify its conformity with the general policies and procedures laid down for project development, particularly in respect of availability in the pledges of the commodities asked for, compliance with nutritional standards, adequacy of administrative arrangements for implementing the project and the impact of WFP supplies on indigenous production and import trade. Copies of the request along with summaries specially prepared for convenient reference, are dispatched at this stage for comments by technical specialists concerned in the United Nations and the specialized agencies and to the FAO Consultative Sub-Committee on Surplus Disposal, the last named for consultation on the required safeguarding of commercial markets. In exceptional cases, it may be necessary to send a special mission to review a request on the spot. The processing of a request is completed in the light of the outcome of all these consultations. The object is to determine and lay down the specific conditions under which the project should be operated in order to assure a reasonable chance for its success. If these conditions are agreed to by the requesting government, steps are taken for approving the project and for execution of a formal instrument of agreement. For purposes of illustration we have included two summaries of official requests (see Annexes, pages 105 to 108). The identification of the countries has been omitted. These summaries indicate the scope of preparation and inquiry and the problems of co-ordination.

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[1] In many cases the project receiving WFP aid is part of a larger country financed project, e.g. food aid amounting to as little as two per cent of the total investment in the project.

As in the case of originating a request, the primary responsibility for *project execution* rests with the recipient country. Its government takes charge of the storage, transport and distribution of food once it has been brought to the borders of the country. The cost of freight, insurance, superintendence, etc. up to the arrival of the food at the border is covered by WFP. In the absence of such a port the cost of unloading in the port of call and of transport to the border of the recipient country is also paid for by WFP. As regards the transport and distribution of the food within the country, the Executive Director has to make sure that the foodstuffs which are being supplied under the Program reach their ultimate destination and that wastes and loss are restricted to a minimum. His local representative carries out this task in close co-operation with the resident representative of the Technical Assistance Board and the country representative of the FAO. Project agreements provide for the delivery of commodities to the country as grants without repayment, or on condition that when the food is sold internally for local currency, after consultation with and approval of the Executive Director of the WFP, the currency remains the property of the government of the recipient country but is to be used for the particular purpose and activities specified in the project agreement.

The Executive Director is responsible for the *evaluation of projects* in the Program. Evaluation is the process in which systematic verification can be made on whether and to what extent the declared objectives of a program are in fact being realized. This enables the correction of errors and improvement in operational activities. To do this, it is usually necessary to arrange a rapid survey of conditions prevailing at the beginning of a project before WFP aid has begun to yield results, so that changes occurring later may be clearly appreciated by being viewed against the earlier picture.

The general regulations which govern the administration of the Program emphasize the need to learn from experience in implementing projects and call for yearly reporting of results of completed projects and their appraisal to the Intergovernmental Committee. The regulations also call for the recipient country to give full co-operation to the Program in observation of operations from time to time, in checking their effects and completing appraisal reports of the results of each project. Analysis reports for each project have to be submitted to the recipient country concerned for its comments before the final report is submitted to the I.G.C. The material collected during the period of execution of a project consisting of the base line survey, the quarterly and annual progress reports submitted by the executing agency, the observations of independent consultant bodies, if any, and of TAB Resident Representatives and *ad hoc* inspection reports of visiting international staff members will provide the basis for a final evaluation on termination of WFP aid to the project in question. (*Continued, page 108*).

Annex A. Summary of Official Request

Country: ....
Title of project: Expansion of a Pulp and Paper Factory
*Total cost of WFP**: $442,480
Cost of food only: $367,860

1. *Purpose of project and of WFP aid*

The purpose of the project is to assist in increasing the pulp and paper output of the .... Paper Enterprise factory at .... through modernization and expansion by providing a supplementary ration for workers engaged on heavy manual labour under difficult working conditions.

This factory employs about 3,250 unskilled workers of whom 1,400 are low-wage workers engaged on the heavy construction work connected with the modernization and expansion of the plant. Supplementary food will be provided for these workers and their families. These 1,400 workers cannot at present afford an adequate diet and are not provided with a balanced meal at the works canteen. The funds to cover basic dietary essentials, such as bread and meat for the daily meal previously spent by the management will be used to meet the cost of vegetables and other protective foods to be served in the canteen. The improved diet which the workers will receive will help to increase their productivity.

2. *Local executing machinery*

The General Directorate of the .... Paper Enterprise at the factory site at .... will be the authority responsible for the implementation of the project.

3. *Duration of WFP contribution to project*

Two years, beginning as soon as possible.

4. *Cost of project*

	$	$
(a) Non-food costs		7,985,500
(i) capital	6,235,600	
(ii) other	1,749,900	
(b) Food costs and related costs		600,100
(i) WFP food at international prices	442,020	
(ii) local food supplied by the Government	144,440	
(iii) external transport, insurance, and superintendence	74,620	
(iv) unloading, storing, transporting, and distributing WFP food in the recipient country	13,180	
Total costs:		$8,585,600

WFP food costs as % of total cost: 5%

5. *WFP costs*

(a) Food commodities

Type	*Quantity* (MT)	*Total value†* ($)
Wheat flour	1,789	178,900
Vegetable oil	103	39,140
Cheese	103	77,250
Dried skim milk	103	30,900
Beans	154	35,420
Tea	5	6,250
		367,860
(b) External transport, insurance and superintendence		74,620
Total costs:		$442,480

6. *Mode of calculation of food*

(a) WFP is intended to supply a supplementary diet.

(b) The daily ration per person to be supplied by WFP consists of:

Commodity	*Quantity* (grams)
Wheat flour	350
Vegetable oil	20
Cheese	20
Dried skim milk	20
Beans	30
Tea	1

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* All monetary values are expressed in US dollars.
† Estimated at the international prices prevailing when this summary was prepared.

its nutritive value is: 1,600 calories
50 grams protein
34 grams fats

(c) Number of beneficiaries: 1,400 workers and their families totalling 7,000 people.
(d) Number of days of WFP assistance: 730 days.
(e) Kinds of local foods to be consumed in addition to WFP food: bread, meat, fresh fruit and vegetables.

7. *Mode of distribution of food*	A part of the WFP food will be provided to the workers in addition to their regular meals in the canteens, and the rest of the food for their families will be distributed to them for them to take home.
8. *Provisions for meeting non-food costs*	Appropriations have been made in the budget of the General Directorate of the .... Paper Industry to cover all the non-food costs for the period for which WFP aid is requested.
9. *Conditions for avoiding displacement of commercial supplies*	At present the low-wage workers, for whom the food aid is intended, cannot purchase sufficient food, especially considering the heavy manual work they are doing. WFP food will therefore be in addition to that which is already purchased in local markets. The factory management will continue to spend the same amount on food for these 1,400 workers as it has done up to now.
10. *Arrangements for carrying on the purposes of the project after termination of WFP aid*	It is hoped that by the time WFP aid ceases, labour productivity will have increased as a result of plant modernization, and that the workers will be earning high enough wages to allow them to purchase the necessary foods for their families. The factory management will endeavour to maintain the quality of the canteen meals served.
11. *Date of approval by the Executive Director*	20 July 1964.

Annex B. Summary of Official Request

Country: ....
Title of project: Colonization
Total cost to WFP:* $659,325
Cost of food and feed only: $471,625

1. *Purpose of project and of WFP aid*	For a number of years the Government has been taking preparatory measures for the colonization of the area of ...., in the Department of .... By 1963 the Government had invested about $41 million, of which $18 million was obtained as a loan from the International Bank for Reconstruction and Development for this purpose, in conformity with recommendations made by a joint FAO/IBRD Agricultural Mission. In the present project the object is to bring 45,600 hectares of land into agricultural production. The crops to be raised include cotton, maize, rice, sweet potatoes, legumes and fruit. Cattle, pigs and poultry will also be raised. WFP aid will be made available to settlers allocated land up to 20 hectares in area and to their families (average four dependants per family) and their animals, for about 18 months, or 550 days, in 1965/66. The Government will facilitate the sale at reduced prices of WFP food to settlers by extending credit to them. WFP food aid will also be made available to workers employed directly by the colonization agency. Upon termination of WFP aid, approximately 800 settlers and their families will have been established on the medium and small-size farms thus created. The .... scheme will serve as a pilot project for the whole of ....
2. *Local executing machinery*	The project will be administered by the .... Irrigation and Colonization Agency established by the National Bureau for Agricultural Reform and Development, which is attached to the Office of the President .... of ....
3. *Duration of WFP contribution to project*	18 months (550 days), starting as soon as possible.

4. *Costs of project*	$	$
(a) Non-food costs		14,730,000
(i) capital	10,000,000	
(ii) other	4,730,000	

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* All monetary values are shown in US dollars.

(b) Food and feed costs and related costs		2,450,934
(i) WFP food and feed at international prices	471,625	
(ii) local food and feed grown by settlers	1,108,209	
(iii) external transport, insurance and superintendence	157,700	
(iv) unloading, storing, transporting and distributing WFP food and feed in the recipient country	683,400	
(v) other costs, including local supervision	30,000	
Total costs:		$17,180,934

WFP food and feed cost as % of total costs: 2.7%.

5. *WFP costs*

(a) Food and feed commodities

Type	*Quantity* (MT)	*Total value** ($)
Dried skim milk	220	66,000
Wheat flour	1,320	132,000
Vegetable oil	110	44,000
Beans	110	27,500
Sorghum	3,675	202,125
		471,625
(b) External transport, insurance and superintendence		157,700
(c) Other costs, including local supervision		30,000
Total costs:		$659,325

6. *Mode of calculation of food and feed*

Food

(a) WFP aid is intended to supply a partial diet for the settler families and workers.

(b) The daily ration per person to be supplied by WFP consists of:

Commodity	*Quantity* (grams)
Dried skim milk	40
Wheat flour	240
Vegetable oil	20
Beans	20

its nutritive value is: 1,197 calories
47 grams protein
26 grams fats

(c) Number of beneficiaries: during the entire period of WFP assistance, the total number of beneficiaries will be 10,000 persons on an average, consisting of 800 settler families, equivalent to 4,000 persons, and 6,000 workers.

Feed

(d) WFP feed (sorghum) will be supplied for animals as a supplementary ration in accordance with the following yearly scale:

Species	*Quantity* (Kg.)
Cattle	
Adult	520
Calves	260
Pigs	450
Poultry	50

The average number of animals to be fed is estimated to be 2,500 adult cattle, 1,700 calves, 1,000 pigs and 5,000 poultry.

(e) Number of months of food and feed assistance: 18 months (550 days).

(f) Kinds of local food and feed to be consumed in addition to WFP food and feed include:
(i) Food: rice, maize, sugar, vegetables, tubers and fruit.
(ii) Feed: green fodder, cotton cake, and molasses.

7. *Mode of distribution of food and feed*

About 20% of the food will be reserved for supply, free of charge, to special groups in institutions, such as hospitals, schools and workers' canteens. The balance of the food and all the sorghum will be sold at 50% of the prevailing domestic prices. The sales proceeds will be credited to a fund and used to provide subsidized food and feed to new settlers and workers after the WFP aided project has terminated. The food and feed will be distributed and sold to the beneficiaries at fortnightly intervals.

8. *Provisions for meeting non-food costs*

The .... Irrigation and Colonization Agency has made the necessary budgetary appropriations to meet the non-food costs, including the costs of unloading, transporting, storing, etc., of WFP food and feed.

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* Estimated at the international prices prevailing when this summary was prepared.

9. *Conditions for avoiding displacement of commercial supplies*	WFP food and feed assistance will be extended to settlers, their families and their animals, and to workers, to cover subsistance requirements during the period before the land begins to yield. It will be a substitute for their previously home-produced supplies; no displacement of commercial supplies is thus envisaged.
10. *Arrangements for carrying on the purposes of the project after termination of WFP aid*	The Government will continue to pursue the basic purpose of the project after the assistance from WFP has ended.
11. *Date of approval by the Executive Director*	15 September 1964.
12. *Remarks*	An IBRD officer is advising the .... A WFP representative visited the project area in October 1964 and received a favourable impression about the prospects for the project's success.

One of the aspects of the appraisal specially emphasized is the prospective and actual effect of the project upon local food production including possible ways and means of increasing such production and upon the demand for agricultural products produced in the recipient country.

Emergencies for which food aid can be supplied include shortages of food supplies arising from unforeseen or uncontrollable causes such as earthquakes, floods and droughts, as well as refugee migration. By their very nature the emergencies are difficult to predict. It is therefore not so easy to plan the procurement and disposal of commodities in advance, nor is it easy to plan the handling and distribution in recipient countries. In spite of the difficulties, it has been possible to expedite the provision of emergency aid with the co-operation of donor countries. Also at the receiving end every effort is made by the countries concerned to handle and distribute the donated supplies expeditiously. Recipient governments are also required to supply the World Food Program with adequate data on the utilization of the supplies and with the essential information needed to enable the World Food Program to evaluate the results of the emergency action from its initiation to its conclusion. Recipient governments are expected to lay on effective administrative arrangements in order to expedite submission of information required.

Types of Projects.—The Executive Director of the WFP in his statement to the Sixth Session of the IGC stated that the projects underway or under consideration can be grouped under four broad headings, apart from emergency food aid projects. The *first* of these relates to work projects in which unemployed or underemployed laborers and their families are provided with food on the basis of carefully calculated rations, taking into account the need for improved nutrition and existing local food habits. While many of these projects aim at agricultural development in fields such as irrigation, afforestation, and land improvement, others such as projects for the construction of low-cost housing or feeder roads are calculated to improve the economic infrastructure. There are projects in the field of industrialization too, as for example, expansion of the steel, coal, electrical power, pulp and paper industries, or even prospecting for minerals. The common denominator in all these activities is to assist in finding useful employment for the large reservoir of unused rural manpower that has not had an opportunity to participate in the development process.

The *second* group concerns the settlement of people in new areas. Here food is supplied as subsistence for the benefit of new settlers for the time needed to start producing their own food on the new land. Projects in this group require very careful preparation and take time, but if this is done and aid commitments can be made for long periods, there would be considerable scope for enlargement of action in this field in many developing countries.

The *third* group constitutes special feeding projects. Food aid through the WFP to schools, ranging from kindergarten and primary schools to university level is designed to provide educational opportunities to children who would otherwise be unable to attend school. The feeding of expectant mothers and children before they enter school is aimed at improving the health of persons at critical stages of life.

The *fourth* broad group of projects deal with the promotion of increased livestock production through improved animal feeding.

A more detailed breakdown by category of all approved projects (96) shows the following distribution:

Expectant mothers and pre-school feeding (1)
Feeding of students (10)
Feeding of other special groups (4)
Colonization and land settlement (14)
Land reform (1)
Land reclamation and development (9)
Irrigation and drainage
Afforestation (8)
Diversification of crops (1)
Promotion of animal husbandry (9)
Establishment of stocks for price stabilization (2)
Community development (8)
Housing, building and area planning (3)
Road construction (4)
Other public works (8)
Industrial projects (7)
Mining projects (2)

A breakdown by regions shows 30 projects in Africa, 39 in Asia, 13 in Latin America and the Caribbean countries, and 14 in Europe (these are all in Turkey).

Operational Problems.—The mechanics of food aid operations after an agreement has been signed between the WFP and the recipient country are not simple. There is the problem of synchronizing delivery of all the items in a project "food basket". Thus a land settlement project in Country A will receive vegetable oil and wheat from the USA, dried whole milk and cheese from Canada, and dried fish from Norway. In the case of Country B involving a resettlement project the WFP will call for canned fish from Norway, Sweden, Tunisia and Germany, canned meat from Denmark, dried skim milk from Germany, vegetable oil from the USA, butter from the Netherlands, wheat, flour and maize from the USA. Not all projects require such a complicated delivery schedule—but every project involves getting food from one or more countries.

It is almost impossible to attain synchronization with any degree of accuracy under current procedures. Factors such as the different distances the component commodities have to travel, the uncertainty in the timing of shipments, and the varying time-lag in procuring commodities in different donor countries are not subject to control by the Program. The executing agents in a recipient country are therefore advised to start distribution soon after the arrival of one or two basic items, rather than waiting for the arrival of sufficient items to constitute a really well-balanced diet.

The question of type of container, and of unit size for food containers, to be used on a project is requiring continuous experimenting.

A more difficult problem arises out of the unfamiliarity of recipient countries with the kinds of food provided by the Program. As these are mostly obtained from temperate zone countries, many of them are more or less unfamiliar to the populations of the developing countries. Thus the beneficiaries in many projects were at first reluctant to consume WFP foodstuffs, but when they were taught how to prepare these items to suit their own taste, the reluctance and even prejudice were largely overcome.

Accomplishments.—It is too soon to determine the effectiveness of a multilateral food aid program.[1] Recently, the WFP reported on some of the activities under way, using food aid.[2]

1. In Ghana the building of the Aksombo Dam, a part of the Volta River Hydro-electric Scheme for the production of cheap and abundant electricity vital to all other government development programs including industrialization, will create a man-made lake flooding out about 80,000 farming people in an area of 3,275 square miles. The WFP Volta River Agricultural Resettlement Project provides for assistance to help resettle the displaced farmers and their families in 52 new Ghanaian villages. The bulk of the 4,800 tons of food aid, including wheat flour, maize, canned fish and meat, dried skim milk, soybean oil and butter has arrived at the port of Tema. For six months, most of the food will be given free to new settlers on thousands of acres of freshly cleared land—thus providing the men, women and children with a balanced diet until the farmers have enough time to harvest their first crop. Further, the government is using this opportunity to introduce modern mechanized farming techniques. It seeks to alter traditional patterns of land use, with the goal of increasing agricultural production. The sale of the remaining WFP food will help pay the wages of 2,000 workers hired to build houses for the farmers, as well as for the construction of roads, sanitation facilities and other community necessities.
2. WFP aid is used for development of rural communities in Togo; training of unemployed urban youths for rural settlement in Congo (Brazzaville); seed improvement and its promotion among farmers in Burundi; and virgin land cultivation in Tanganyika. There is a WFP project for irrigation works in Ceylon; in India, two projects to raise production of high protein food: one using technologically improved animal feed to make cows yield greater quantities of milk—another, employing this type of feed in poultry, to increase egg and chicken output. In Taiwan there is the construction of a sea dike, irrigation and drainage channels, roads and windbreaks, in a project for the reclamation of 1,000 hectares of tidal land. In the Punitaqui Valley of Chile the WFP is helping to rehabilitate pasture that has become desert and waning forests. In Jamaica there is a project for watershed management.
3. In Iraq, to help relieve urban unemployment, food aid from the WFP will provide jobs for 2,000 workers for a full year. About 2,000 tons of food worth nearly US$500,000 will be used to finance, in part, the construction of a circular by-pass road to avoid traffic congestion in the city of Arbil. In addition, a slum area will be cleared and a park will rise in its place.
4. In Turkey, more than 125 miles of roads connecting 47 villages and linking them to the national road network are due to be built with WFP aid.
5. In Afghanistan, where educational facilities are limited, the second national five-year plan provides for the development and expansion of education at all levels. The government is counting on WFP food assistance, so that it can take in more students in boarding schools in the secondary educational system of the capital, Kabul. Students from all over the country—8,500 of them—come to study there.

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[1] See the section entitled "The Future", at the end of this article.

[2] Freedom from Hunger Campaign. September-October 1964. FAO. Rome. An analytical appraisal will be possible after a number of projects have been completed and reported upon.

6. In the hills of the Caldas region of Colombia, nearly half of the school-age children cannot read or write. There is no shortage of schools. Families are just too poor to send their children to school. Sometimes the children are not strong enough to go. As part of the government's General Plan for the Economic and Social Development of Colombia, WFP food aid will give 13,000 children a chance to go to school. Moreover, the WFP will supply food for 7,500 pre-schoolers and 9,500 expectant mothers.
7. When Bali's Mount Agung erupted, thousands of islanders were killed or left homeless in the rain of death and destruction. The World Food Program first moved in with disaster relief supplies worth more than $3 million—14,500 tons of food, including maize, powdered milk, dried and canned fish and vegetable oil. Then in June 1964, the WFP Intergovernmental Committee announced it would assist the Indonesian Government in a large rehabilitation undertaking. The program envisages reclaiming 86,000 acres of agricultural land, developing forestry and repairing irrigation and road systems. The reclamation of land which was covered and damaged by lava involves soil conservation work, including erosion control. River courses are to be re-established by constructing bolsters and levees to stabilize channels and by dredging. Communications are to be restored by rebuilding bridges and roads. Food will be distributed to tens of thousands of workers and their families to supplement cash wages paid by Government. Responsibility for distribution of food in each village will rest with a local committee. The massive task of reconstruction will require some 10,574,400 man-days of labor, it is estimated. The World Food Program will provide food for 173,600 persons (workers and dependents) during the first phase of the work. The Bali rebuilding program, aimed for completion in June 1966, has a budget of $11,750,000. World Food Program participation involves nearly $3,106,000 in food aid.
8. The WFP has sent food supplies worth $1.2 million to Skopje, Yugoslavia, the scene of an earthquake, the last consignment reaching there during the first week of May 1964. Cheese, butter and egg powder were drawn from contributions made to the Program by the Netherlands, Norway and Denmark. In all, 720 tons of cheese, 245 tons of butter and 216 tons of powdered eggs were sent to feed the workers engaged in the rebuilding of Skopje. This food was partly served in the workers' canteens and partly distributed in packets to the workers—some 36,000 of them. Each packet contained about 28 ounces of cheese, about 9 ounces of butter and 8 ounces of egg powder. This protein-rich food has served a vital purpose in sustaining the health and productivity of the workers. The Director of the Fund for Helping the Reconstruction of Skopje, said the protective foods supplied by the World Food Program helped to reduce the sickness rate among workers, especially during the bitter winter months.

It should be noted that it took some time for countries to take advantage of WFP. It was an unknown factor. Its resources were limited. Projects that could be considered were small compared to the activities under some of the bilateral operations. Project preparation had to be thorough. Supervision and appraisal were enforced. Yet it soon became apparent that the experiment had possibilities and the tempo of interest picked up to the point that the total requests for aid exceeded the resources of the WFP.

At the same time it must also be noted that the Program did not reach its objective of $100 million, and that one country, the United States, has provided more than half of the resources. Contributions, especially from developed countries, have been uneven. The Program has been regarded with suspicion. It is feared that it would encourage surplus production beyond current levels and that it would discourage developing countries from increasing their own agricultural output. Some think this Program is meant to have some nations finance the disposal of surpluses of other nations. Then again there are those who feel that the Program is too narrow in its operations and too rigid in the application of the rules. Furthermore, the concept of a multilateral organization taking over all food aid operations is not acceptable to all donor or recipient nations. The question has been raised whether food aid is really additional to other forms of aid. Experience to date has indicated that the WFP as presently set up is not the most effective organization to deal with emergency situations. These and many other questions will have to be dealt with when the future of the WFP is discussed.

The future

During 1965 the members of the FAO and the United Nations will review the experiences of the WFP during its experimental three-year phase to determine whether this multilateral program should be continued and if it is agreed to do so, the size, scope and direction. To assist member countries in their evaluation, seven reports are being reviewed. There are five studies prepared by independent experts which are intended to aid in the consideration of future development of multilateral food programs by the Intergovernmental Committee. The first three studies are concerned with substantive questions related to food aid including the impact of food aid on donor and food exporting countries and the possible dimensions of such aid in the coming years. The fourth study deals with questions of organization and methods of administering food aid. The last is concerned with the special study of multilateral programs of food aid. The studies are as follows:

(1) The Demand for Food and Conditions Governing Food Aid during Development.
(2) The Impact of Food Aid in Donor and Other Food Exporting Countries.
(3) The Linking of Food Aid with Other Aid.
(4) Operational and Administrative Problems of Food Aid.
(5) The Role of Multilateral Food Aid Programs.

There is the report of the Executive Director of the WFP giving his analytical appraisal of the operational experiences and outlining his recommendations.[1] The Secretary-General of the United Nations and the Director-General of FAO have their reports outlining their recommendations.

The Intergovernmental Committee of WFP met in April. The recommendations of this Committee will be submitted to the FAO Council meeting June 1965 and ECOSOC (the UN Economic and Social Council) in July 1965. The recommendations of these executive bodies will be sent for final decision to the Thirteenth Session of the FAO Conference in November 1965 and to the United Nations General Assembly at about that time. If it is agreed not to continue this Program, the WFP will cease operations after it has met the obligations incurred over the three-year period of operations. If it is agreed to continue the WFP, there will likely be a pledging conference before the end of 1965. The success of the pledging conference in raising funds from many contributors will determine the size and scope of an extended WFP.

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[1] In a WFP release (February 1, 1965), Mr. A. H. Boerma, Executive Director, said that the experience of the past two years had given "good grounds" for a request for future growth. The Program is due to complete its experimental period at the end of 1965. He suggested that the WFP, established jointly by the UN and the FAO, should be authorized to commit up to $110 million in 1966, with provision for growth up to $200 million annually by 1970. Mr. Boerma said that a target of 30 per cent for cash and services combined should be set for contributions to a future program. He said such a program should continue to help disaster-stricken countries, concentrating on the later (or rebuilding) stages rather than the initial stages of the emergency. The scope for using food aid in feeding programs—under which the food helps more students to attend school or provides a better diet for pupil and teacher—was limited only by the availability of national facilities to use it properly. The highest priority should go to secondary schools and vocational-training institutes.

FARM CREDIT LEGISLATION IN CANADA

R. S. RUST

The economic growth of Canada depends to a large extent on how well resources are utilized. Credit facilities play a crucial role in the flexibility and mobility of resources, in bringing them to their fullest possible development, increasing productivity and raising levels of living. Agricultural development, an essential component of the nation's economic growth, depends considerably on the credit facilities that are available to farmers at reasonable cost. The important part that credit plays in the development of efficient, economic farms makes it essential that farmers and others concerned with the welfare of agriculture be aware of the conditions under which farm credit is available through government-sponsored credit programs.

We have had this problem of farm financing in Canada ever since the early days of settlement, but it did got get much attention from the federal or provincial governments until after World War I when increasing land values began to make farm ownership difficult. During the war period, wheat acreage in the Prairie provinces rose from 10 million to 22 million acres. This rapid expansion in acreage created an especially strong demand for farm credit. The demand was met for the most part, by mortgage, loan and insurance companies at what some people considered to be "extremely high" interest rates. These high rates and a general lack of provisions in the mortgage agreements for premium adjustments in years of low farm incomes made it very difficult for many farmers and impossible for others to meet their mortgage commitments. In an attempt to remedy this situation several provinces established their own farm credit agencies during the 1920's. The federal government entered the long-term farm credit field in 1927 with the passing of the Canadian Farm Loan Act. In the years immediately following, the lack of provincial enabling legislation prevented the loaning authority, the Canadian Farm Loan Board, from starting operations in many provinces. This problem was not overcome until 1935. While the provincial farm credit agencies gradually ceased operations, the Quebec Government entered the field with the passing of the Quebec Farm Credit Act in 1936.

The period of credit expansion in agriculture continued until 1930, when as a result of low yields and low prices, farm incomes were insufficient to meet mortgage payments. In an attempt to forestall widespread foreclosures and the dispossession of farmers, the governments of the three Prairie provinces then passed moratoria and debt adjustment legislation. In 1934, the federal government passed The Farmers' Creditors Arrangement Act. This legislation, and later amendments, provided for compulsory adjustment between debtors and creditors. The decisions of the Board of Review which was set up under this Act usually scaled down farm debts to the capacity of the debtor to pay. As a consequence of these federal and provincial legislative actions, the debts of many farmers were either reduced or put on a crop-share basis. The debt adjustment legislation, and prospects of low farm incomes in the immediate future, led to a withdrawal of mortgage companies from the farm credit business. For most companies the withdrawal was permanent. It is presently estimated that less than three per cent of the farm credit extended in 1961 came from mortgage, loan and insurance companies.

The rapid changes brought about by World War II conditions, and in the postwar years, put increasing pressure on both the federal and provincial governments for greater participation in the farm credit field. The tremendous expansion in capital requirements for the purchasing and developing of economic farm units increased very rapidly. At the same time, a large part of the agricultural labor force left the rural areas to join the armed forces or take up residence in urban centers. For the most part, this labor force did not return to farms after the war. Meanwhile the migration of rural youth away from farms to the cities and towns steadily increased. The shortage of farm labor and the demand for agricultural products for the war effort made it imperative that farmers should be provided with intermediate-term credit for the purchase of machinery, livestock and other essentials. The federal government met this need with the enactment of the Farm Improvement Loans Act in 1944. To assist those war veterans who wished to return to farming, the federal government had also passed the Veterans Land Act in 1942. Under the regulations pertaining to this Act supervision of farm loans was introduced. An amendment to the regulations in 1947 made it possible for repayments to be based on crop yields.

Despite a decrease in the size of the labor force in agriculture during and after World War II, new types of machinery and improved technological developments resulted in increased production per farm. However, the costs of production, machinery costs especially, increased rapidly and, with a less rapid increase in farm prices, led to increased pressure for the enlargement of farms. In many cases, enlargement by the purchasing of more land was the only solution to maintaining an economic farm unit. In 1941, the average size of farm in Canada was 237 acres. By 1951, this had increased to 279 acres and by 1961 it averaged 359 acres. The steady expansion in farm size increased the demand for, and the price of land in many areas. This, together with the increased cost of livestock, machinery and other farm equipment, made it extremely difficult for young farmers to get established. Whereas the estimated value of farm land, buildings, machinery and livestock on Canadian farms averaged only $6,389 per farm in 1935, it increased to $9,076 in 1945, $17,026 in 1955 and $25,120 in 1961. These average values are deceptively low since they include a large number of uneconomic farm units.

To meet the growing needs of agriculture the federal government passed amendments to the Veterans' Land Act which increased the maximum assistance from $3,600 to $4,800 in 1943, $6,000 in 1946, $10,500 in 1954 and finally to $20,000 in 1959. Under the Farm Improvement Loans Act of 1944, farmers could obtain loans up to $3,000. This maximum was increased to $4,000 in 1953, $5,000 in 1956, $7,500 in 1959 and $15,000 in 1964. The maximum size of loan made by the Canadian Farm Loan Board was increased from $6,000 to $10,000 in 1952 ($12,000 when second mortgages were included) and to $15,000 in 1957. Under its successor, the Farm Credit Corporation, maximum loans were raised to $27,500 in 1959 and $55,000 in 1964.

During the 1950's most of the provincial governments, as well as the federal government, became increasingly aware of shortcomings in the existing long-term farm credit legislation. New farm credit legislation was passed by Ontario in 1952, Newfoundland in 1953, Nova Scotia in 1954, Alberta in 1957, Manitoba in 1958, and Prince Edward Island, Saskatchewan and the federal government in 1959. Amendments to existing farm credit legislation were made by both New Brunswick and Quebec during this period. The federal government's Farm Credit Act of 1959 superseded the Canadian Farm Loan Act and, under the authority of the Farm Credit Corporation, authorized farm loans up to a maximum of $20,000 or up to $27,500 provided applicants did not obtain further loans under the Farm Improvement Loans Act and could meet other conditions. In the new federal Act and some of the provincial Acts, provisions were made for supervised loans. The special needs of young farmers received increased attention and the size of loans and the conditions under which loans were made became more in line with present farming conditions. The new federal Act also enabled farmers in Western Canada to make loan repayments according to their annual crop yields.

The trends in farm credit legislation in the 1960's appear to be for larger government-sponsored loans that are more in line with land values, for increased attention to the needs of young farmers who are just starting their farming careers, and to fill in the gaps where established legislation has been found inadequate.

A considerable amount of long-term credit is still supplied to Canadian farmers by private individuals. A large portion of this credit is provided by former farmers through land sale agreements.

Both federal and provincial governments have avoided direct participation in the short-term farm credit field. This type of credit is mainly supplied by local banks, credit unions, private individuals, and finance companies. In addition, a large amount of short-term credit, in the form of goods and services is extended to farmers by farm supply companies, dealers, agents and shopkeepers.

FEDERAL FARM CREDIT LEGISLATION[1]

Veterans' Land Act 1942 (as amended 1962). The Veterans' Land Act makes provision for qualified World War II and Special Force (Korea) veterans to settle on land in Canada as full-time farmers, or as part-time farmers (small holders), or to establish themselves as commercial fishermen. The Act has three main parts of which Part I and Part III provide for farm credit. There is no statutory date for ending financial assistance but veterans, to participate in the benefits of the Act, must qualify before October 31, 1968.

Under Part I of the Act, three main types of credit assistance are available to qualified veterans. Loans made under the three types are for a period up to 30 years with interest at 3½ per cent. The first two types also include a conditional grant if the veteran fulfills his contract for the first 10 years. The first type of loan under Part I authorizes the purchase and resale to a veteran of land, to which the Director of the Veterans' Land Act holds title, permanent improvements, livestock and equipment up to a value of $6,000. Of this amount, up to $1,200 may be used for the purchase of livestock and equipment. The contract sale price to the veteran for his purchases, in addition to his down payment of 10 per cent for land and improvements, is two-thirds of the amount used for the purchase of land and buildings and for effecting improvements. The remainder of the expenditures for land and improvements (23⅓ per cent), plus any amount used for the purchase of stock and equipment up to $1,200 is a conditional grant and need not be repaid if the veteran fulfills the terms of his contract for 10 years.

The second type of assistance under Part I of the Act makes available loans up to $5,800 to veterans who have farm rental or purchase agreements that are satisfactory to the Director. Under this contract, up to $3,000 of the $5,800 may be used to purchase livestock and farm equipment. The veteran is required to make a down payment of 20 per cent of the total cost to the Director of the livestock and farm equipment. He must also sign a contract covering 40 per cent of such costs, payable within 10 years. On land, improvements, and building materials, the veteran must also make a down payment of 10 per cent of their total cost to the Director. He is required to sign a contract, covering 50 per cent of these costs, payable over a period not exceeding 30 years. In each case, the remaining 40 per cent of the purchase price is non-repayable provided the veteran fulfills the terms of his contract for 10 years. The interest rate on the repayable amounts of both contracts is 3½ per cent.

In both the foregoing types of loans, the Director of the Veterans' Land Act purchases land, livestock, and farm equipment and effects permanent improvements. Sale is then made to the veteran under Agreement for Sale.

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[1] The first date shown after each Act indicates the year in which the Act was passed while the second date indicates the most recent amendment.

The third type of loan under Part I of the Act provides advances to qualified veterans who own and operate their own land. Loans may be made up to $4,400 for a period not exceeding 30 years for the discharge of encumbrances on farm land, purchase of livestock and farm equipment and for effecting farm improvements. The interest rate is 3½ per cent. The total advance under this provision cannot exceed 60 per cent of the value of the land. Loans for the purchase of livestock and farm equipment cannot exceed 50 per cent of the land value and cannot exceed $2,500. Security is taken by a first mortgage on land. Unlike the previously discussed types of Part I loans, no conditional grant is involved in the contract.

For the purpose of organizing and developing economic family farm units, Part III of the Act authorizes fully repayable additional loans to full-time farming veterans, holding purchase contracts or mortgages under Part I. The maximum of such loans is the lesser of $20,000 including the outstanding debt under Part I or 75 per cent of the security of the land, basic herd livestock and equipment held by V.L.A. as security for repayment. The security in land must not be less than 60 per cent of the total security held. This additional farm credit may be used for the purchase of land, basic herd livestock, necessary farm equipment, effecting permanent improvements, the repayment of "reasonable" debts incurred by a veteran relative to these various purposes or in the payment of debts incurred in the operation of the farm. The loans are repayable over periods not to exceed 30 years with interest at 5 per cent.

Veterans already settled on small family farms may receive, under Part III, additional financial assistance up to $6,000 or $12,000 less the amount still owing under Part I and Part III whichever is the lesser. The outstanding indebtedness together with the further assistance to be advanced cannot exceed 75 per cent of the market value of the land. In such cases, the loans may be used for the purchase of farm land, permanent improvements, basic-herd livestock, and the repayment of debts reasonably incurred in the operation of the farm. To qualify for a loan under the small family-farm provision of Part III, the veteran must have an equity of at least 25 per cent in the land offered as security for the assistance requested, or pay in cash an amount sufficient to raise his equity in the security to the required percentage. The repayment period is up to 30 years at 5 per cent interest.

Financial assistance available to part-time farmers under Part I is basically similar to that provided full-time farmers although mortgage loans are not encouraged. Part III assistance is limited to $6,000 of which the veteran is required to provide in cash or equity, one dollar for each four dollars borrowed.

Veteran farmers may repay their indebtedness by way of a crop payment plan which provides for delivery of a share of crop from a specified number of acres each year.

The Veterans' Land Act is financed by the federal government through annual parliamentary appropriations.

Farm Credit Act 1959 (as amended 1964). This Act succeeded the Canadian Farm Loan Act of 1927. It is administered by the Farm Credit Corporation. The head office of the Corporation is in Ottawa and branch offices are located in Kelowna, Edmonton, Regina, Winnipeg, Toronto, Quebec and Moncton. The stated objective by which the Corporation is guided is to

> . . . assist competent Canadian farmers in the voluntary reorganization of their industry into economic family units each of which will be of sufficient size to produce, under the operation of its owner, the farm income necessary to meet all operating and maintenance costs, provide an adequate livelihood for the owner and his dependents and to retire any required credit, with interest, within an appropriate term.

Loans made by the Corporation may be used for the following purposes: (1) to acquire land, (2) to purchase fertilizer, seed, basic-herd livestock, tools, machinery and any implements and equipment necessary for the efficient operation of the mortgaged farm, (3) to erect farm buildings or to clear, drain, irrigate, fence or make any other permanent improvement to the mortgaged farm or to other land used by the borrower as part of his farming enterprise, (4) to discharge liabilities, to pay operating costs and the costs of maintaining the farmer and his family for such period as in the judgement of the Corporation is necessary for the establishment of the farming enterprise in respect of which the loan is made, (5) to assist in the development on the mortgaged land of a secondary, non-agricultural enterprise provided this is the most profitable use of the land, or (6) for any purpose that in the judgement of the Corporation is necessary for the efficient operation of the mortgaged farm or that will increase the value of the farming enterprise in respect of which the loan is made.

Before making loans the Corporation must satisfy itself that each prospective borrower has a definite plan which has a good prospect of enlarging or reorganizing the farm into an economic farm unit. The Corporation may make loans of two different types. The first type (Part II of the Act) enables a farmer to borrow up to $40,000 for a 30-year period if this amount is not over 75 per cent of the appraised productive value of the land, including any land purchased by the loan. The loan may be made to enable the borrower to acquire land or to advance money to a person who is a son, son-in-law, daughter, daughter-in-law, nephew, niece, brother, sister or a stepchild or foster child of the borrower so that he or she may acquire farm land. To qualify for a Part II loan an applicant's principal occupation must be farming and one who owns or proposes to purchase a farm to be mortgaged, and who is actually engaged in or is about to become engaged in operating a farm. An appraisal fee of $10 at the time of each application for a loan plus a further fee equal to two-fifths of one per cent of the amount of the loan must be deducted from the loan at the time of disbursement. The second type (Part III of the Act) is designed to cover the long and intermediate term credit needs of young farmers starting farming with a limited supply of capital. In this case, the loan cannot exceed $55,000 or 75 per cent of the appraised value of the farm lands, basic herd livestock and necessary farm equipment. The receiver of such a loan must be at least 21 years of age and must not have reached his 45th birthday. In addition the applicant is required to have at least five years of farming experience.

The applicant for a Part III loan must submit for approval a plan of his farming operations. When approval of a plan is given by the Corporation and a loan made, the applicant undertakes to follow the established plan. A loan of this type involves supervision and inspection of the farmer's operations by a representative of the Corporation until the principal amount of the loan outstanding has ben reduced to 75 per cent of the appraised value of the land. The recipient of a Part III loan is required to submit annually to the Corporation a net worth statement, a statement of revenues and expenditures, as well as any other information which may be requested. There is a supervision fee of $25 a year until the loan is reduced to 75 per cent of the appraised value of the farm. This type of loan requires that the borrower carry life insurance covering the amount owed to the Corporation. Borrowers under Part II of the Act may, at the time of applying for a loan, elect to take out similar insurance subject to their being accepted by the insurance company. Premiums are paid through the Corporation into a group policy. All Part III loans secured by land and chattels are repayable within 30 years. Except with the approval of the Corporation a borrower under Part III of the Act is not eligible for a loan under the Farm Improvement Loans Act unless the principal amount of the loan still outstanding is less than 75 per cent of the appraised value of the land. In addition, a fee equal to one-half of one per cent of the amount of the loan or $200, whichever is the lesser, is deducted from the loan at the time of disbursement. Provision is also made in the Act for making loans to family farm corporations and to co-operative farm associations.

The interest rate on Part II loans up to $20,000 and on Part III loans up to $27,500 is 5 per cent. On Part II loans exceeding $20,000 and Part III loans exceeding $27,500 the interest rate on that part of a loan exceeding these amounts is prescribed by the Corporation. This rate must be such that it will cover the total cost to the Corporation, including a "reasonable" reserve against loss. The loans are repayable in equal annual or semi-annual installments. Where a borrower is principally engaged in producing wheat, oats, barley, flax, rye or rape seed and is located in the spring wheat area, the Corporation may enter into a crop-share agreement with the borrower. This applies only to the Prairie provinces and the Peace River Block of British Columbia. Such agreements alleviate the difficulty farmers have in making substantial payments on loans in those years when yields are well below average. In the case of wheat, for example, no delivery is required if the yield is 6 bushels or less per seeded acre. For a yield over 6 bushels and up to a maximum of 18 bushels per acre, one-half of the crop must be delivered to the order of the Corporation. The proceeds from such crop-share deliveries are credited to the mortgage account. No crop share is required of that part of the yield over 18 bushels per seeded acre. The share due from coarse grains and oil seeds is calculated on a proportionate value basis. Where the farmer wishes to retain all or part of the Corporation's share of his grain for feed, he may pay the Corporation its value in cash.

The Farm Credit Corporation is financed by the Federal Government out of the Consolidated Revenue Fund. The amount of this financing (presently $24 million) is set by Act of Parliament and constitutes the capital of the Corporation. In addition, the Corporation may borrow from the Minister of Finance out of the Consolidated Revenue Fund. The aggregate amount of such loans cannot exceed 25 times the capital of the Corporation.

Farm Improvement Loans Act 1944 (as amended 1964). The aim of this legislation is to improve and develop farms by enabling the farmer to equip his farm with modern labor-saving equipment, to secure more and better livestock for breeding purposes and to make such other improvements as will bring the farm up to its maximum productivity. Improvement of farm living conditions, particularly in the farm home is also a major objective.

All loans under the Farm Improvement Loans Act are made by the chartered banks. The principal amount of a loan, together with the amount owing in respect of other Farm Improvement loans previously made to the borrower cannot exceed $15,000. The repayment period for machinery loans cannot exceed 5 years and loans made for the purchase of motor trucks are restricted to a maximum period of 2½ years. For other loans the repayment period is from 1 to 10 years and is left to the descretion of the banks. Security for loans is taken under Section 88 of the Bank Act. The interest rate is 5 per cent.

The chartered banks provide their own financing but are protected by a Federal Government guarantee which provides for payment of claims in an amount not to exceed 10 per cent of the amount lost by a bank during any lending period. The over-all liability of the Federal government is limited to a maximum amount which may be lent by all banks collectively in a statutory lending period. The present maximum is set at $700,000,000 and covers the three years July 1, 1965 to June 30, 1968.

Farm Machinery Syndicates Credit Act 1964. This Act is administered by the Farm Credit Corporation. The Act provides that no less than three persons who are independently engaged in farming or who are members of a co-operative farm association and where the principal occupation of the majority of the applicants is farming may, after forming a farm machinery syndicate, apply to the Corporation for a loan to purchase farm machinery.

The amount of the loan cannot exceed 80 per cent of the actual price, to the farm machinery syndicate, of the farm machinery to be purchased. The total amount outstanding to such a syndicate cannot exceed an amount equal to the amount obtained when $15,000 is multiplied by the number of members in the syndicate at the time the loan is made or $100,000 whichever is the lesser.

Loans are repayable by the syndicate in annual or semi-annual installments of principal plus interest for a period not exceeding 7 years. The term of repayment depends on the type of machine purchased and on the expected life of the machine.

The interest rate on loans is prescribed by the Corporation. This rate must be such that it covers the cost of money advanced to the Corporation plus the cost of administering the loan together with a reasonable reserve against possible loss. At the time of making a loan, there is a service charge made equal to one per cent of the amount of the loan.

PROVINCIAL FARM CREDIT LEGISLATION[1]

British Columbia

Farmers' Land Clearing Assistance Act 1948 (R.S. 1960 regulations as amended 1959). This Act is administered by the Minister of Agriculture. Under the Act and especially through the regulations pertaining to the Act, owners or occupiers of land suitable for farming may apply for assistance in clearing and in developing land. Evidence must be given that the improvements will be beneficial to the farming of the land and that the applicant receives or intends to receive more than 50 per cent of his annual income from the land to be cleared or developed. The applicant must have sufficient farming experience and financial resources to make profitable use of the land after it is improved or developed. The health and age of the applicant is also considered before granting a contract.

When the farmer does not make any payment on completion of the clearing and developing of the land the maximum sum of the contract, including the cost of any services, work, materials and equipment supplied or used, cannot exceed $5,000. When the contract requires that the farmer pay 15 per cent of the total cost on completion of the clearing and development, the total cost of such development and clearing, including all other costs, cannot exceed $5,882. A third type of contract contains a condition that the farmer pay one quarter of the total cost of clearing and developing, and all other costs. In this case, the contract cannot exceed $6,667.

The operations must be supervised. Repayment is by equal annual installments, over a period of 15 or 20 years, depending on the type of contract granted. The interest rate is 4 per cent.

Distress Area Assistance Act 1956 (R. S. 1960). Under this Act the Lieutenant-Governor in Council may authorize the Minister of Agriculture to enter into an agreement with the Federal Government to share equally in a guarantee to a bank against loss from loans made to a farmer in a distress area under the Federal Farm Improvement Loans Act. Such farm loans are for the purpose of replanting crops or for purchasing feed as a result of abnormal conditions. Provision is also made for the authorization of the minister of agriculture of British Columbia to enter into an agreement with a bank whereby the province will guarantee the bank against such part of the losses as determined by the Lieutenant-Governor in Council. The maximum loan is $5,000. The interest rate on these short-term loans is presently 6 per cent.

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[1] Specific legal identification of each Act has been purposely omitted. The first date shown after each Act indicates the year in which the legislation was originally passed. In those cases where provincial statutes have been revised since the passing of an Act, the abbreviation R.S. and date are given. The last date given refers to the most recent amendment to the Act or in some cases to an important change in the regulations pertaining to the Act. Most provincial Acts pertaining to farm credit have been amended several times since coming into force.

Alberta

Farm Purchase Credit Act 1957 (Repealed and re-enacted 1963, as amended 1964). The Farm Purchase Credit Act 1963, established the Alberta Farm Purchase Board. Local Advisory Committees in each county accept and process applications. Recommended loans are forwarded to the Central Board for consideration. Approved loans are processed and administered by the Board. However, the local Committee may be called upon for advice or assistance in dealing with problems which may arise. The objective of the Act is to assist farmers in acquiring efficient economic units. Loans may be used to make an initial purchase or to enlarge an existing farm. An applicant must be a Canadian or a British subject, must have lived in Alberta for three years out of the five years immediately preceding loan approval, and have had three years of farming experience. In addition, the farm equipment necessary to operate the farm must be available and the applicant is required to be, or become, a bona fide farmer. The age restriction is from 21 years to 55 years.

Under the terms of the Act, the person selling the property must finance at least 30 per cent of the selling price. The purchaser must make a down payment of 20 per cent to the Board. If the purchaser pays more than 20 per cent, then the vendor carries a smaller amount. The government advances the remaining 50 per cent or $10,000, whichever is the lesser amount. The maximum value of farm land owned or to be purchased by the applicant cannot exceed $40,000. In the case of the purchase of a farm for $40,000, the maximum amount that the person selling the property could receive at the time of sale would be $18,000, unless the purchaser paid more than the required 20 per cent down payment. The repayment period may be for a period of up to 20 years or until the applicant's sixty-sixth birthday, whichever comes first. The interest rate to the purchaser is 5 per cent and includes life insurance for the amount of the liability. No supervision of farming operations is required. Counselling service is available through agricultural representatives. The person selling the property is safeguarded by a guaranteed contract. The interest rate he receives is 4½ per cent. Ninety per cent of the selling price is guaranteed by the Province and the remaining 10 per cent by the County involved.

The Alberta Farm Purchase Board is financed by advances from the provincial government to a Farm Purchase Revolving Fund.

Homestead Lease Loan Act 1955 (as amended 1960). This Act is administered by the Homestead Lease Loan Advisory Board. The Act provided provincial authority to establish the Homestead Lease Loan Fund from which the Board may authorize loans up to $1,000 to a farmer for the clearing and breaking of land. The length of term on such loans is 10 years and the interest rate is 3½ per cent. On overdue annual installments the rate is 4½ per cent.

Farm Home Improvements Act 1959. By this Act the Provincial Government guarantees to pay any bank or Treasury Board that makes a loan to a farmer for home improvements, the amount of any loss sustained on the loan up to 50 per cent of the amount of the loss. The guarantee only applies where it is established that the principal amount of the loan, together with the amount owing in respect to other loans made to the farmer and guaranteed under this Act do not exceed $2,000. The principal amount of the loan is repayable within 10 years and in installments of not less than $100 each year. The rate of interest on such loans cannot exceed 5 per cent.

Loans may be used for such improvements as water systems, sewage systems, central heating systems, insulation, concrete basements, new floors, new roofs, new siding, painting, interior decorating, remodeling and additions to houses for the installation of bathrooms.

Feeder Associations Guarantee Act 1937, R.S. 1955, (as revised 1964). The provisions of this Act guarantee 25 per cent of the losses sustained by any person making loans to a feeder association. The applicant must be a bona fide farmer and a member of a feeder association, must have an adequate feed supply and submit a deposit as set down in an established schedule. He can obtain $3,000 in his first and $6,000 in his second year of feeding. The minimum purchase is 50 lambs or 10 head of cattle. Loans are repayable within 12 months. The total amount of guaranteed borrowing under this Act at any one time is $500,000.

Saskatchewan

Family Farm Credit Act 1959 (as amended 1964). The Family Farm Credit Act is administered by the Co-operative Trust Company. The purpose of the legislation is to provide a source of credit for the purchase or development of economic family units. Loans cannot exceed $25,000. Loans are not available to farmers whose assets exceed $35,000. The main security is on land; however, under certain conditions chattel security may be taken. The term of the loan may be up to 30 years if the applicant is less than 40 years of age. If he is over 40, the term of the loan will be of shorter duration. The interest rate, including life insurance coverage, is 6½ per cent. An applicant must have been residing in Saskatchewan for three years before his application for a loan, must have the necessary equipment to operate the farm and must have farming experience. Counselling service is available to all recipients of these loans. If payments are in default, counselling service becomes compulsory.

The finances for farm loans are obtained by the Co-operative Trust Company by selling securities. These securities are backed by the government and yield a 4½ per cent interest. Since inception, more than $5,000,000 have been loaned under this Act.

The Government guarantees losses, if any, suffered by the Company from loans made under the Act, up to 10 per cent of total loans made.

Family Farm Improvement Act 1960, (as revised 1963). By this Act, the Family Farm Improvements Branch is authorized to provide technical, construction, installation services and financial assistance for the development, improvement and modernization of farmsteads through the installation of water and sewage systems and the relocation of farm buildings with the view of improving access to water supplies, roads, schools, school bus routes, power and telephone lines and other rural services. Materials are provided and construction carried out by the Branch before farmers are billed for the cost. The Act also provides guarantees covering 10 per cent of any losses sustained by Credit Unions during a calendar year, resulting from farm loans made for the installation of water and sewage systems.

Manitoba

Agricultural Credit Act 1958 (as amended 1963). The Agricultural Credit Act is administered by the Manitoba Agricultural Credit Corporation. The Corporation makes loans under this Act for the purposes of developing and perpetuating economic family farm units. It is designed especially to assist in the transfer of family farms from father to son and to assist in the enlargement or conversion of family farms that are uneconomic into economic units.

Under Part I, the Corporation may make loans up to 65 per cent of the appraised value of the security to a maximum of $25,000. Sixty per cent of the security must be in land. Under certain circumstances 40 per cent of the security may be in livestock but only 20 per cent in equipment or 20 per cent in equipment and 20 per cent in livestock. The age restriction for loans is from 21 to 60 years. The applicant must have been residing in Manitoba for three years before his application and must have farmed for three years out of the five years before his application for a loan. The repayment period is up to 30 years with interest at 4½ per cent to young farmers who are between the ages of 21 and 31 and 6 per cent to all others who are 31 years of age or over. The age limit at the date of application is 60 years except in the case of a father and son or father-in-law and son-in-law partnership in which case the age limit is 65 years.

Part II has as its objective the expansion and improvement of beef cattle herds in the province. Qualifications for applicants as to residency and experience are the same as Part I. Under this Part the Corporation may make loans up to a maximum of $10,000 for a period of up to ten years. Security is taken on the beef-breeding herd only by means of a chattel mortgage and no loan shall be approved in excess of 65 per cent of the value of the cattle offered as security, such value to be the lesser of current market value or the average market value for comparable quality cattle during the preceding seven years. No loan shall be approved unless animals to be purchased, together with any which may be owned by the borrower at the time the loan is approved, total a minimum of 25 cattle of breeding age. Loans will be made at a 7 per cent interest rate but each year in which the annual payment is paid by the due date an interest credit of one-half of one per cent will be set aside and deducted from the installment due the following year. Thus, the effective rate of interest for those who meet their commitments on time will be 6½ per cent.

Each applicant for a loan must have or obtain and use a brand registered under the Animal Husbandry Act on all his cattle before a loan can be approved. Applicants for a loan must be in the 21 to 60-year age bracket and the terms of each loan provide that it is repayable in full before the borrower reaches 65 years of age.

Where the applicant is not the owner of all or part of the land to be used for raising and providing for his herd, he must satisfy the Corporation that he has security of tenure by way of lease on land not owned for at least the period of repayment of his loan.

An applicant is eligible to apply for both a Part I and a Part II loan but the total loan must not exceed $25,000. Expenditures and collections are supervised. The recipient of a loan must make farming his main occupation.

The Manitoba Agricultural Credit Corporation is financed directly by the Provincial Government.

Ontario[1]

Junior Farmer Establishment Act 1952 (R.S. 1960, as amended 1964). Under this Act, The Ontario Junior Farmer Establishment Loan Corporation makes loans to qualified junior farmers, to owners of family farms and incorporated family farms where one of the family members is a junior farmer, and to farmers who operate a farm as a partnership where one of the partners is a junior farmer.

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[1] Under the Tile Drainage Act, municipalities may make loans to farmers, for tile drainage and finance them through the sale of debentures. The minimum interest rate is 3 per cent,

Applicant must be 21 years old and not over 35 years of age. Three years of residence in Ontario is required immediately preceding the application. All applicants must have at least three years of farming experience and show intent to farm on a full-time basis. If a farmer does not qualify for a loan because of his age, his wife if eligible may apply for the loan. Loans are made to assist in the establishment, development and operation of farms. All loans are secured by first mortgages and must not exceed 80 per cent of the appraised value of the land and buildings. The maximum loan is $40,000. The interest rate is 5 per cent. Interest only is payable on the first payment date and thereafter the loan is repayable in annual installments of principal and interest, sufficient to discharge the debt at the end of such period as is agreed upon, but no loan may be made for more than 30 years. Payments on account of the loan in addition to those provided for in the mortgage, may be made at any time.

The Act also makes provision for the Government to guarantee bank loans made to junior farmers for the establishment, development and operation of their farms. A qualified junior farmer who has a loan from the Corporation may apply to a bank for a loan of up to $5,000 for operating expenses at the current rate of bank interest repayable within 10 years. The Province of Ontario may guarantee payment of losses sustained by a chartered bank as a result of such loans in an amount not exceeding 10 per cent of the aggregate principal amount of the bank loans. In the case of a family farm or an incorporated family farm the guaranteed bank loan can be for as much as $10,000.

Under the regulations pertaining to the Act provision is made for the group life insurance of borrowers. For loans up to $20,000 or less insurance on the life of a borrower who is a junior farmer is optional. On loans in excess of $20,000 life insurance coverage is mandatory.

Quebec

Quebec Farm Credit Act 1936 (R.S. 1941 as amended 1964). This Act is administered by the Quebec Farm Credit Bureau. It provides for the making of two types of loans to farmers.

(a) A regular loan may be obtained from the Quebec Farm Credit Bureau for the purchase of or improvement to farm real estate, to consolidate debts, to construct and repair essential buildings, and for other necessities. The loan cannot exceed 80 per cent of the appraised value of the security or $15,000. Security is by first mortgage for a term not exceeding 39½ years. Payments of $20 per $1,000 borrowed are made semi-annually, including capital and interest. The interest rate is 2½ per cent. While there is no specified age restriction, the borrower must be 21 years of age or older, must have farm training, live on a farm, enjoy good health, and make farming his main occupation.

(b) An Establishment loan from the Bureau is for the purchase of an economic farm unit. The loan cannot exceed 90 per cent of the appraised value of the security or $15,000. Security is by first mortgage and it is obligatory for the borrower to carry life insurance in an amount equivalent to the amount of the loan. The term is for 39½ years. Payments of $20 per $1,000 borrowed are made semi-annually, including capital and interest. A special rebate of one-third of the amount of the loan (maximum $3,000) is granted after 10 years from the date of the mortgage deed, provided occupancy and other conditions have been met. The loan bears interest at 2½ per cent. The borrower must be from 21 to 40 years of age, must reside on his farm and make farming his main occupation.

Quebec Farm Improvement Act 1961. The loans made under this Act are administered by the chartered banks or caisses populaires (credit unions). Loans are made for purposes pertaining to farm improvements or to farm organization. Loans made for farm improvement cannot exceed $4,000 while those for farm organization cannot exceed $3,000. Security may be held by way of assignment as outlined under Section 88 of the Bank Act or by collateral security, if the loan is for farm organization, for example, for the purchase of cattle for breeding purposes, for the purchase of farm implements, agricultural equipment or machinery. Where the loan is for farm improvements, the security is left to the discretion of the lenders, who may make an arrangement with the borrowers on that matter. Where the loan is to be used for the purchase of livestock the term is up to 5 years and where it is used for the purchase of implements or making improvements, the term is up to a maximum of 10 years. The interest rate is 6 per cent. This rate is, however, subject to a rebate by the government of an amount equal to interest at 3 per cent provided the loan or loans do not exceed the maximum amounts for the prescribed purposes listed in the Act. Farming must be the borrower's main occupation. The borrower must also reside permanently on the farm.

The Act Respecting Farm Loans (R.S. 1941, as amended 1964). The objective of this legislation is to enable farmers in the Province of Quebec, who borrow from the Federal Farm Credit Corporation or from the Veterans' Land Act Administration to benefit by somewhat similar conditions on interest rates as apply to farmers who borrow from the Quebec Farm Credit Bureau.

Under the Quebec Farm Loan Act borrowers received the benefit of an interest contribution from the Provincial Government based on the difference, not exceeding 3 per cent, between the annual interest of 3 per cent and that charged on farm loans.

Effective November 8, 1950, the section of The Act Respecting Farm Loans dealing with the authorization of paying a portion of the interest to those farmers who obtained loans from the Canadian Farm Loan Board was amended so that rebates were discontinued.

By a further amendment in 1962, the Quebec Farm Credit Bureau was authorized to pay as of May 1, 1962 the excess interest charged by the Farm Credit Corporation above the rate of 2½ per cent payable on loans to Quebec farmers from the Corporation. This applies only to loans that do not exceed $15,000. On loans in excess of $15,000 the total interest rebate cannot exceed that which would be received from a $15,000 loan. This amendment applied to all loans made since November 8, 1950 by the Canadian Farm Loan Board or its successor, the Farm Credit Corporation, but pertains only to interest charges on the balance of the principal still owing on such loans as of May 1, 1962 and on subsequent loans made by the Corporation. In addition the interest rebate on a Farm Credit Corporation loan is only applicable to that portion of the loan secured by land mortgage and does not apply to any portion secured by chattels.

A 1964 amendment to the Act made provision for interest rebates on loans made to full-time Quebec farmers under Part III of the Veterans' Land Act. The rebate applies only to the balance of principal owing on loans as of May 1, 1964 and on subsequent loans. The $15,000-limit on which interest rebates apply is the same as for the 1962 amendment.

On loans obtained after May 1, 1962, the Bureau may reimburse one-third of the borrower's debt up to $3,000 in the case of a loan which is similar to a settlement loan from the Bureau providing the borrower lives on his farm and operates it without interruption during the 10 years following the loan.

Regular loans and Establishment loans are financed by the Quebec Farm Bureau. The Provincial Government purchases securities issued by the Bureau and also makes short-term loans to the Bureau. The Quebec Farm Improvement loans are financed by either the commercial banks or credit unions (caisses populaires).

Nova Scotia

Agriculture and Marketing Act 1954 (Part 19, as amended 1964.) Loans to prospective farmers were made under the Nova Scotia Land Settlement Act before 1939. In 1939 this legislation was incorporated into the Agriculture and Marketing Act as Part XVIII, Settlement of Farm Lands, and later became Part XIX of the Agriculture and Marketing Act when the Statutes of Nova Scotia were revised in 1954.

Part XIX of the Act is administered by the Nova Scotia Land Settlement Board. The primary purpose is to assist farmers, farmer's sons and others, including immigrants with farm experience, to establish themselves on productive farm land or farm land capable of being made productive and to assist them in making a success of their venture. Assistance may also be given to established farmers who may wish to increase the size of their operation by purchasing additional land.

Under the Act and Regulations made under the Act, farm loans may be granted up to a maximum of $30,000 for one person, or up to a maximum of $50,000 for two or more persons who, as a partnership, wish to purchase farm real estate. Loans in excess of the maximum may be considered by the Board, but in addition to Board approval, they must be ratified by the Lieutenant-Governor in Council. A loan in the first instance is contingent on part of the purchase being farm real estate, but thereafter additional loans may be granted the client for the purchase of livestock, equipment and farm improvements within the maximum limits mentioned above.

As a general policy, the Board will loan 75 per cent of the appraised value of real estate and 50 per cent of the appraised value of stock and equipment. The remainder must be provided by the client in cash or cash equivalent as represented by the client's equity in real property or stock and equipment, with the Board taking title to land offered as security and a chattel mortgage on stock and equipment.

To assist young experienced or well-trained men to start farming the Board may grant loans up to 90 per cent of the appraised value of real estate and 75 per cent of the appraised value of stock and equipment.

In addition the Regulations provide an opportunity for an applicant to furnish a guarantor, if he lacks sufficient capital. However, the applicant, in all cases must provide a minimum of $2,500 in cash or equivalent.

Loans may have a repayment period up to 30 years with an interest rate of 5 per cent. The age restriction is from 21 to 55 years although a father-and-son partnership may be granted a loan from ages 19 to 65. Group Life and Total Disability insurance coverage is compulsory and the cost is partly borne by the Board. A client whose obligation to the Board exceeds $15,000 must agree to supervision of his farm management program.

Funds are provided by the Government of Nova Scotia on an unlimited authority basis. Repayments of principal are returned to the fund, with interest on accounts being credited to Provincial revenue.

New Brunswick

Farm Settlement Act 1912 (R.S. 1952, as amended 1964). This Act is administered by the Farm Settlement Board. Under Part I of the Act and Regulations pertaining to the Act, provision is made for the purchase of farms not exceeding $10,000 in value for one person or $15,000 in the case of a partnership. Not less than 25 per cent of the purchase price must be paid to the Board when possession is given to the purchaser. Thus the net maximum real estate loan that can be obtained by one person under this Part is $7,500 and in the case of partnership $11,250. Applicants under this section must be Canadian citizens, have at least two years of recent farm experience and be between the ages of

21 and 50. Loans are secured by an agreement for sale contract. The maximum term is 30 years. For periods less than 15 years the interest rate is three per cent while for periods over 15 years the interest rate is five per cent.

A farmer who has purchased real estate under the Farm Settlement Act since April 1, 1946 may also be granted a loan for the purchase of livestock and equipment. This cannot exceed 75 per cent of the appraised value of the livestock and equipment or $7,500 whichever is the smaller. Such loans are usually secured by a chattel mortgage. The maximum term is 10 years. The interest rate is four per cent on loans less than 5 years and 5 per cent on loans exceeding 5 years.

Immigrant settlers are also eligible under this section but are required to have an additional year of farming experience in Canada, and must be able to make a down payment of at least one-third of the purchase price of the farm property and be in a position to acquire sufficient livestock and equipment to carry on a farm operation.

Part II is designed to assist in the establishment of young farmers on farms. They must be sons of farmers who have been residents of the province for at least five years and must themselves have had at least five years of practical farming experience. The loan for the purchase of real estate, livestock and farm machinery cannot exceed $20,000 for any applicant. The value of the real estate must be at least 50 per cent of the appraised value of the combined real estate, livestock and machinery value. The maximum length of term is 30 years. The interest rate on contracts up to 15 years is three per cent while on those over 15 years it is five per cent. The loan is supervised in that each borrower must present a plan of operations and submit an annual financial statement to the Board.

Livestock and farm machinery loans for farmers under this section are similar to those under Part I.

Farm Loans Act 1963. Under this Act the Provincial Treasury guarantees 50 per cent of the loss or $2,500, whichever is the lesser, to a bank or credit union which makes a loan to a farmer for the purchase of cattle, sheep or swine. To be reimbursed, the loaning institution must report each loan within a prescribed time and must report the loss within five years of the time in which the loan was made or within a time that may otherwise be prescribed.

Prince Edward Island

Assistance To Establish Young Farmers Act 1959 (as amended 1962). This Act is administered by the Prince Edward Island Farm Establishment Board. The Board may make loans to individuals who have two years of farming experience and who are between the ages of 21 and 50 years and who have two years residence in Canada. The applicant must show intent to be a full-time farmer. The loan cannot be more than 85 per cent of the appraised value of the security or $10,000. Loans may be made for the acquisition of land for farming purposes, for improvements, to consolidate outstanding liabilities, to provide drainage, to purchase livestock, seed, fertilizer, farm machinery and the equipment necessary for the proper operation of a farm. Land and buildings are appraised on the basis of their value for farming purposes. Loans are secured by first mortgage on farm land, chattel mortgage, life insurance policies or other securities. All loans now being made are secured by a group life insurance policy. The repayment period is up to 25 years. Repayments are so arranged that low first payments are possible. The interest rate on loans (5 per cent in 1959) is set by the Lieutenant-Governor-in-Council. Progress reports are required. Legislative provisions are made for supervision.

The Farm Establishment Board is financed by loans from the banks. These loans are guaranteed by the Provincial Government.

Newfoundland

Farm Development Act 1953, (Regulations as amended 1959). This Act is administered by the Farm Development Loan Board under the Minister of Mines, Agriculture and Resources. The Act was designed to aid qualified farmers to improve or to enlarge their farming operations.

Under the Act, a qualified farmer may obtain a loan of up to $3,500 for the improvement of farm lands, up to $3,500 for the purchase of livestock and up to $3,000 for the purchase of farm equipment. The loans made for the improvement of farm lands or the purchase of livestock cannot exceed 75 per cent of the appraised value of the security offered. Loans made for the purchase of farm equipment cannot exceed 70 per cent of the cash price of such equipment. The loans are to be repaid in monthly, semi-annual or annual installments over a period not exceeding 12 years. As security for the repayment of loans, the Board usually requires a mortgage on land and buildings. In some instances, a chattel mortgage is accepted. The Board may also make loans for the purpose of constructing buildings other than dwelling houses, to farmers engaged in fur farming. Such loans cannot exceed 70 per cent of the appraised value of the land and buildings. These loans may be paid in annual installments over a period not to exceed 10 years. The interest rates on all loans is 3½ per cent, under an amortization plan.

The Farm Development Loan Board is financed by funds from the Provincial Government to the Farm Development Loan Fund. The Board administers the Fund and such other moneys as may from time to time come under its control.

VARIATIONS IN COSTS AND RETURNS FROM HOGS

W. L. HANLON

Returns to livestock producers vary widely from year to year and very few are the types of livestock production in which this year-to-year variability exceeds that which characterizes the hog enterprise.

In Nova Scotia and New Brunswick the main factors leading to variations in returns from the hog enterprise are feed costs and hog prices. An insight into the strength of these factors may be gained from an analysis of economic data from a study of 19 feeder hog enterprises conducted in these two provinces in 1962.

We have organized Table 1 in such a way as to provide a comparative summary of average receipts, expenditures and net returns from hogs for the 1961-63 three-year period. Data for 1961 concern actual costs and returns and data for 1962 and 1963 have been adjusted according to changes in feed costs and hog prices during these years.

Table 1.—Returns from Hogs, 19 Feeder Hog Enterprises, Nova Scotia and New Brunswick, 1961-63

		1961	1962	1963
Hog receipts	$	20,166	20,830	19,806
Hog expenses	$	17,888	19,016	19,045
Hog labor returns	$	2,278	1,814	761
Labor returns per hog	$	4.93	3.93	1.65
Hog labor returns per hour	$	3.00	2.39	1.00
Number of hogs marketed	No.	462	462	462
Hours of labor on hogs	No.	759	759	759
Index of hog prices (1961=100)[a]		100.0	103.4	98.1
Index of feed costs (1961=100)[a]		100.0	110.0	110.3

[a] Source:—Dominion Bureau of Statistics

The year 1961 was rather favorable for hog production. The 19 hog producers sold 462 hogs per farm, on the average, and they received $20,166, in all, for these sales. Expenses incurred for the hog enterprise totaled $17,888. The difference between receipts and expenses is referred to, in this article, as labor returns, and represents the net returns to the operator for the time spent on the hog enterprise. They averaged $4.93 per hog. The farmers spent 759 hours, on the average, in the production and marketing of the 462 hogs and thus had a net return of $3.00 an hour.

Prices of Grade A hogs at mainland plants in the Maritime provinces averaged $28.38 a hundredweight in 1961, rose to $29.35 in 1962 and dropped to $27.85 a hundredweight in 1963. Higher prices in 1962 were offset by a 10-per-cent increase in feed costs. In 1963 the hog producers were caught in a cost-price squeeze; hog prices dropped 3.4 per cent and feed costs increased slightly.

Table 2 summarizes all collected information pertaining to the cost of producing hogs. Feed was by far the most important element of cost; it did, in fact, account for as much as 62 per cent of the cost of raising a hog to market age. Other elements of costs have their own importance but, feed costs are, obviously, the chief determinants of the profitability of the hog enterprise.

Table 2.—Cost of Producing Hogs on 19 Feeder Enterprises in Nova Scotia and New Brunswick, 1961

Item	Cost per hog	Per cent of total
	—dollars—	—per cent—
Feed	24.39	62.1
Purchased stock	10.49	26.7
Bedding	0.17	0.5
Veterinary and drugs	0.17	0.4
Trucking	0.24	0.6
Electricity and telephone	0.06	0.2
Use of buildings and equipment	0.67	1.7
Interest on livestock	0.46	1.2
Marketing costs	1.38	3.5
Other	0.02	—
Labor, at $0.75 an hour	1.23	3.1
Total cost per hog marketed	39.28	100.0

The two main components of feed costs are the volume of feed consumed and the price paid for this feed. For our 19 feeder hog enterprises, the volume of feed required to produce a market hog averaged 724 pounds per farm. Feed consumption ranged from 557 pounds per hog on one farm to 854 pounds on another farm.

From discussions with hog producers we gained the idea that there is a tendency to underestimate the volume of feed required to raise a hog to market age. From time to time growers make spot checks on special lots of hogs. If no losses or setbacks occur, feed consumption may be rather low. A calculation of annual hog feed requirements, however, usually indicates much higher rates of consumption. Slow rates of growth associated with poor lots of hogs or setbacks from diseases and other causes increase feed consumption per hog. Losses, particularly those which occur when hogs are approaching maturity, also increase the average amount of feed required per hog marketed. The combined influence of these factors over a 12-month period usually leads to feed requirements, per hog, somewhat higher than the producers' own estimates of these requirements.

Feed Prices.—Prices paid for feed varied considerably from farm to farm. Part of this variation was attributed to differences in the kind of feed purchased or in the relative amounts of starter, grower or finishing rations. The scale of operation and the location of the farm with respect to availability of feed supplies, particularly in bulk form, also had a bearing on prices paid for feed. In areas of concentrated livestock production, competition among feed companies tends to benefit the farmer through lower prices and improved services.

Because of the variation in types of feed and prices paid for feed, one may be inclined to think that the old rule of thumb, "pounds of feed required to finish a hog", is not a good measure of feeding efficiency. Cost of feed per hog would appear to be a more accurate measure as it gives consideration to both the price paid per hundredweight and the amount of feed consumed per hog.

Feed costs, for the 19 feeder enterprises, averaged $24.39 per hog (Table 2). They ranged from $19.09 per hog on one farm to $28.93 per hog on another.

Other Costs.—Weanling pigs ranked next to feed costs, as an expense component. On individual farms average prices paid for weanling pigs ranged from $8.83 to $12.15 per pig. The range reflects variations in age and quality of stock as well as some variation in prices from area to area. Some farmers listed ability to secure a regular supply of good quality weanlings as their major problem in hog production. Pigs were purchased mainly from other farmers rather than at auction sales. On the average, operators spent five minutes and drove one mile to purchase a weanling pig.

Marketing and labor were other significant elements of cost. In our calculations we charged 75 cents an hour for all time spent on the hog enterprise. Labor costs varied widely, owing to differences in chore time for feeding and cleaning pens. Labor-saving equipment and techniques, rather than scale of operation, seemed to be the main factor affecting labor costs per hog. The hog enterprise requires a large investment in buildings and equipment. Overhead costs, per hog, however, represent only a small part of the total cost of raising hogs.

CHANGES IN FARM ORGANIZATION ON FARMS WITH LOW-PRODUCTIVITY SOILS IN THE BROWN SOIL ZONE OF SASKATCHEWAN, 1958-63

M. Ragush

The area selected for the study of changes in farm organization on typical farms, with low-productivity soils, in the Brown soil zone of Saskatchewan was visited in 1958 and in 1963. The four groups of farms studied in 1963—medium and large grain farms and medium and large grain-cattle farms—were similar in size and type to the four groups studied in 1958. Information collected on crop production—land use, production practices, wheat yields—and on farm capital, receipts and expense was analyzed, to determine what changes had occurred, on farms in the Brown soil zone, during the five-year interval.

The study area comprises 46 townships from 12 miles west of Swift Current to 14 miles east of the Alberta-Saskatchewan boundary and consists predominantly of light-textured soils classed as marginal and submarginal for wheat production. Variations in types of farming reflect the wide range in the arability and productivity of the soils. On the very light soils, such as the dune sands, sheep and cattle ranching was the only type of agricultural production that could be expected to bring profits. At the other extreme, that is, in the farms with the more productive soils, grain growing predominated. The farm most typical of the area, however, was the grain-cattle farm that used its more productive soils for grain growing and its less productive, and sometimes non-arable, land for cattle grazing. The proportion of the total farm area, in improved land, was high, on grain farms, on the average, in 1958 (75 per cent) and even higher in 1963 (84 per cent). On grain-cattle farms, about half of the farm area, on the average, was unimproved in 1958; this proportion increased slightly on the medium grain-cattle farms in 1963 but declined to about 35 per cent on the large farms. This unimproved land was not left completely idle; it served as grazing land for the cattle. Wheat was the main crop on all farms in both years but the wheat acreage, as a proportion of the total grain acreage, was from three to 15 per cent higher in 1963 than in 1958. There was a parallel decrease in the acreage sown to malting barley and flax. The removal of grain marketing quotas in 1962 may have contributed, to some extent, to the increase in the wheat acreage in 1963.

The average acreage in summerfallow increased over the five-year period. Except for continuous cropping of the land greatly susceptible to wind erosion, most farms had shifted to a two-year summerfallow-crop rotation.

Wheat Yields.—The average wheat crop, per seeded acre, was about 40 per cent higher in 1963 than in 1958. Yields averaged 12.7 bushels an acre on farms visited in 1958 and thus exceeded by 13 per cent the 11.2-bushel average for the 1918-63 period. In 1963 they averaged 17.6 bushels an acre and exceeded the long-time average by 57 per cent. Yields were higher on grain than on grain-cattle farms in both 1958 and 1963. In 1958, farmers, on the average, harvested 4.9 bushels more on medium grain farms than on medium grain-cattle farms and 1.8 bushels more on large grain farms than on large grain-cattle farms. Corresponding higher averages, for 1963, were 2.3 and 2.4 bushels respectively.

Crop Production Practices.—Crop production practices include a wide array of tasks that are habitually performed in a cropping program. In this review of practices on farms with a low-productivity record in the Brown soil zone of Saskatchewan comments will be confined to practices that are a direct help in the production process and practices that may be labeled as "crop services" in a grain production program.

(1) **Before Seeding.**—Except for medium grain farms, more of the land was worked before seeding in 1963 than in 1958. On the average, the proportion of the seeded acreage that had been worked before seeding was as follows:

	Medium grain farms	*Medium grain-cattle farms*	*Large grain farms*	*Large grain-cattle farms*
1958	41	7	32	37
1963	40	21	55	52

The discer and the oneway were the most common type of machine used for this purpose in 1958 and the cultivator and noble blade in 1963. Some weed spraying was done before seeding in 1963 but this type of work was still unheard of in 1958.

(2) **Seeding.**—Greater use was made of the discer and oneway than of the drill, for seeding, in both 1958 and 1963. The proportion of the total seeded acreage sown with a drill on medium grain farms dropped from 34 to 17 per cent over the five-year period but remained fairly constant, at 37 to 45 per cent, for the other types and sizes of farms. A larger proportion of the stubble than of the summerfallow crop was sown with a drill, which may be attributable, at least in part, to the fact that the fall rye crop was usually sown on stubble with a drill.

(3) **After Seeding.**—Two types of post-seeding operations are usually carried out. One type consists in pulling a packer behind a seeding machine and the other in the use of a harrow or of a rod weeder. The proportion of the total acreage on which post-seeding work was done was high in 1958 and 1963, and

remained about the same throughout the five-year period. A significant change was in the extent of use of the harrow. About half of the seeded acres was harrowed in 1958, and less than five per cent in 1963.

(4) **Summerfallowing.**—Two major changes in summerfallowing practices occurred over the 1958-63 period. One was the increase in the number of summerfallow operations and the other was the more extensive use of the blade type of implement. The common practice in 1958 was two and three operations on summerfallow and, in 1963, three and four summerfallow operations. The proportion of the summerfallow acreage covered by the blade type of implement, compared with the disc type, had increased 25 to 75 per cent for almost all summerfallow operations carried out on the four types of farms visited.

A less pronounced change but one that may be indicative of a trend was the increased popularity of the rodweeder, especially for the third and fourth summerfallow operations. The emphasis on cultivators, noble blades, and rodweeders came largely from the ability of these implements to keep trash cover on top and thus reduce the wind erosion hazard.

(5) **Harvesting.**—Straight combining was the most common practice in 1958 but the use of the swather, before combining prevailed in 1963. The swathed acreage, as a proportion of total acreage, ranged from 23 to 41 per cent in 1958 and from 64 to 73 per cent in 1963.

(6) **Rate of Seeding.**—The modal rates of seeding grains, in bushels per acre, in both 1958 and 1963 were 1.5 for durum wheat, 1.25 for hard spring wheat, 2.0 for oats, 1.5 for barley, and 1.0 for rye. With the exception of wheat, there was no discernible change in the rates of seeding in the two study years. The proportion of the total acreage in wheat sown at the higher rate in 1958 (1.5 bushels an acre) was about 10 per cent higher than in 1963.

(7) **Grain Varieties.**—The main variety of durum sown was Stewart in 1958 and Pelissier in 1963. The three main varieties of hard wheat in the two study years were Thatcher, Chinook and Rescue. Thatcher wheat gained in popularity during the five-year period, Chinook stood pat, and Rescue suffered a decline. The main varieties of oats were Ajax in 1958 and Rodney in 1963. Other varieties of oats (Fortune, Garry, Victory and Banner) varied extensively in the degree of usage, indicating no specific preference for a second variety. Montcalm, Compana and Parkland were common varieties of barley in 1958 and Palliser in 1963. The main varieties of flax and rye grown in the two study years were Redwood and Antelope, respectively.

(8) **Fertilizer.**—Only one of the 96 farmers visited in 1958 applied commercial fertilizer and none of the 79 farmers in 1963.

(9) **Weed Spray.**—Weed spray was used on a much larger scale at the end than at the beginning of the five-year period. The proportion of the total seeded acreage covered by weed spray in 1958 and 1963 was 17 and 71 per cent respectively on medium grain farms, 15 and 63 on medium grain-cattle farms, 31 and 70 on large grain farms and 24 and 64 on large grain-cattle farms. To a limited extent, weed spray was also used to control weeds before seeding and on summerfallow in 1963, but no farms reported use of weed spray for this purpose in 1958. The heavy infestation of Tansy Mustard in the study area in 1963 may have been one of the reasons for the extensive use of weed spray.

(10) **Grasshopper Spray.**—The grasshopper infestation was light in both 1958 and 1963. The proportion of the total seeded acreage covered by grasshopper spray ranged from five to 16 per cent, for the four sample groups of farms in 1958, and one to three per cent in 1963.

Table 1.—Land Utilization, Selected Grain and Grain-Cattle Farms on Low-Productivity Soils, Brown Soil Zone of Saskatchewan 1958 and 1963

	1958				1963				1958–63			
	Grain		Grain-Cattle		Grain		Grain-Cattle		Grain		Grain-Cattle	
	Medium	Large	Medium	Large	Medium	Large	Medium	Large	Medium	Large	Medium	Large
	—per cent of cropland acreage—								—per cent—			
Durum wheat on:												
fallow	6.3	3.7	2.6	5.7	9.8	10.1	4.9	10.3	56	173	88	81
stubble	4.5	2.4	5.4	3.1	1.1	2.2	0.3	0.6	−76	−8	−94	−81
Hard wheat on:												
fallow	24.7	29.6	16.3	19.9	30.6	29.2	23.9	23.6	24	−1	47	19
stubble	8.1	7.8	18.5	7.6	1.8	6.1	10.4	7.0	−78	−22	−44	−8
Oats on:												
fallow	1.2	0.6	1.6	2.4	0.3	0.5	3.0	3.0	−75	−17	88	25
stubble	1.6	0.5	4.7	3.0	—	0.1	5.6	1.0	−100	−80	19	67
Barley on:												
fallow	2.5	2.9	3.5	2.0	2.0	0.5	0.2	1.5	−20	−83	−34	−25
stubble	1.4	1.5	0.7	1.8	0.2	0.1	0.3	0.5	−86	−93	−57	−72
Flax on:												
fallow	4.3	2.0	1.9	3.7	0.2	0.1	—	0.2	−95	−95	−100	−95
stubble	1.1	0.2	—	1.1	—	—	—	0.2	−100	−100	—	−82
Rye on:												
fallow	2.0	2.0	2.1	1.3	3.1	2.4	0.8	1.2	55	20	−62	−8
stubble	1.8	5.3	10.9	9.2	2.7	10.2	7.8	6.5	50	92	−28	−29
Safflower on:												
fallow	...	...	...	0.2	...	...	...	...	...	...	...	−100
stubble	...	...	...	0.3	...	...	...	...	...	...	...	−100
Improved pasture	0.5	0.2	2.1	1.8	0.3	0.2	3.2	2.6	−40	none	52	44
Improved hay	0.9	0.7	1.7	3.6	0.5	0.5	2.7	2.2	−44	−29	59	−39
Summerfallow	39.1	40.6	28.0	33.3	47.4	37.8	36.9	39.6	21	−7	32	19
Total cropland	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0				
	—acres per farm—											
Total cropland	558	1,044	577	972	553	1,007	594	1,060				
Unimproved and farmstead	188	356	490	904	104	198	622	562				
Total farm area	746	1,400	1,067	1,876	657	1,205	1,216	1,622				
Number of farms	25	24	23	24	19	19	21	20				

(11) **Seed Purchases.**—The acreage covered with purchased seed was much higher in 1958 than in 1963. The percentage of the total seeded acreage sown with purchased seed ranged from 12 to 23 per cent on the four size and type-groups of farms in 1958 and three to five per cent in 1963. Barley and flax were the common grains purchased in 1958 but no preference for any particular seed grain was indicated in 1963. Much of the barley and flax seed purchased in 1958 were grown as substitutes for wheat as a cash crop, and as a way of bringing crop production programs in line with grain marketing quotas.

(12) **Seed Treatment.**—Slightly over half of the total seeded acreage was sown with seed treated, for the control of pests and diseases, in 1958, and about two-thirds in 1963. The use of the dual-purpose treatment (seed-borne diseases and wireworms), compared with the alternative of treating for seed-borne diseases only, had also increased over the five-year period.

(13) **Custom Seed Cleaning.**—Seed cleaning was usually done on the farm on all sample groups of farms (with the exception of large grain farms in 1963). However, custom seed cleaning by local elevators and seed cleaning plants had greatly increased over the 1958-63 period. The proportion of the total seed requirements that was custom-cleaned ranged from six to 32 per cent for the four groups of farms in 1958 and 34 to 67 per cent in 1963.

(14) **Hail Insurance.**—The number of farms with hail insurance coverage, the acres covered and the value of coverage were much higher in 1963 than in 1958, owing, obviously, to the better crop prospects in 1963. Thirty to 58 per cent of the farms in the four sample groups had all or part of the crop insured in 1958 and 57 to 90 per cent in 1963. In both study years, more grain farms than grain-cattle farms carried hail insurance.

Farm Budgets

Farm Capital.—The total value of farm capital (land, buildings, machinery and livestock) on farms of the same size and type was higher in 1963 than in 1958 (Table 2). Higher land values were the main reason for the increase. These values had increased from $21 to $35 (67 per cent) per improved acre over the five-year period. Machinery investment, per improved acre, had increased 12 per cent on large grain farms but had decreased 24 per cent on medium grain farms, 18 per cent on medium grain-cattle farms and 8 per cent on large grain-cattle farms. Taking account of the increase in price levels, the farms, for financial or other reasons, were not making the purchases necessary to maintain constant inventory values of machinery. The low crop yields for several years before 1963 and the resulting low incomes from grains undoubtedly slowed down the purchasing of new machinery.

Farm Receipts.—Crop receipts were higher in 1963 than in 1958, because of higher yields in 1963. Receipts from crop sales, per acre of improved land, in 1963, were 39 per cent higher on medium grain farms and about 70 per cent higher for the remaining three sample groups of farms.

Income from livestock (Table 2) includes the sale and consumption of livestock and livestock products and also the changes in inventory values for livestock. As would be expected, income from livestock was lower on grain than on grain-cattle farms. Income from livestock was mostly from cattle, particularly on grain-cattle farms.

The main sources of miscellaneous income were P.F.A.A. payments, claims for hail damage and income from custom work. The income from these sources was higher in 1963 than in 1958 on all of the four sample groups of farms.

Farm Expense.—Total cash expenses were higher on grain-cattle than on grain farms of the same size in both 1958 and 1963 (Table 2), because of additional costs involved in the operation of a cattle enterprise. Cash expenses varied widely for such items as real estate, crop, livestock, machinery, and

Table 2.—Farm Budgets, Selected Grain and Grain-Cattle Farms on Low-Productivity Soils, Brown Soil Zone of Saskatchewan 1958 and 1963

	1958				1963				Change 1958–63			
	Grain		Grain-Cattle		Grain		Grain-Cattle		Grain		Grain-Cattle	
	Medium	Large	Medium	Large	Medium	Large	Medium	Large	Medium	Large	Medium	Large
	—dollars per acre of cropland—								—per cent—			
Farm capital:												
Land	22.91	19.03	21.72	21.83	33.81	32.80	38.56	31.35	48	72	78	44
Buildings	4.43	4.26	5.49	5.60	5.38	5.37	8.83	5.12	21	26	61	9
Total real estate	27.34	23.29	27.21	27.43	39.19	38.17	47.39	36.47	43	64	74	33
Machinery	18.32	14.94	17.58	16.60	14.00	16.78	14.45	15.30	−24	12	−18	−8
Livestock	2.82	1.77	12.21	13.94	1.17	0.86	17.36	10.22	−59	477	42	−27
Total farm capital	48.48	40.00	57.00	57.97	54.36	55.81	79.20	61.99	12	40	39	7
Receipts:												
Crop	10.32	8.82	6.39	6.91	14.30	15.04	10.74	11.86	39	70	68	72
Livestock	1.53	0.94	5.04	5.30	0.49	0.45	6.61	4.63	−68	−52	31	−13
Miscellaneous	0.98	0.54	0.81	0.54	1.48	0.95	1.41	0.72	51	76	74	33
Total farm income	12.83	10.30	12.24	12.75	16.27	16.44	18.76	17.21	27	60	53	35
Expenses:												
Cash farm expenses												
Real estate	0.85	0.82	0.96	0.89	0.81	0.68	1.03	1.00	−5	−17	7	12
Crop	0.39	0.41	0.28	0.33	0.42	0.46	0.36	0.41	8	12	29	24
Livestock	0.24	0.20	0.47	0.68	0.10	0.04	0.88	0.96	−58	−80	87	41
Machinery	1.98	1.46	2.02	2.06	2.12	1.55	2.31	1.60	7	6	14	−22
Labor	0.09	0.24	0.11	0.35	0.15	0.14	0.06	0.20	67	−42	−45	−43
Miscellaneous	0.16	0.13	0.20	0.21	0.24	0.19	0.35	0.23	50	46	75	10
Total cash	3.71	3.26	4.04	4.52	3.84	3.06	4.99	4.40	4	−6	24	−3
Depreciation												
Buildings	2.26	1.70	2.40	2.10	2.50	2.25	2.72	2.33	11	32	13	11
Machinery	0.40	0.24	0.30	0.24	0.49	0.41	0.74	0.38	22	71	147	58
Total depreciation	2.66	1.94	2.70	2.34	2.99	2.66	3.46	2.71	12	37	28	16
Total farm expenses	6.37	5.20	6.74	6.86	6.83	5.72	8.45	7.11	7	10	25	4
Return to operator and family for capital and labor	6.46	5.10	5.89	5.89	9.44	10.72	10.31	10.10	46	110	87	71
Acres of cropland	558	1,044	577	972	553	1,007	594	1,060				
Number of farms	25	24	23	24	19	19	21	20				

labor. Crop expenses for crop services (weed spray, grasshopper spray, seed treatment, etc.) were higher in 1963 than in 1958, and seed purchases were lower. The expense for labor was hired labor only. Operator and family labor were the main sources of labor supply and these were not shown as an expense unless a cash transaction was involved. Real estates expenses included land taxes and repairs on buildings, fences and wells.

Total depreciation expenses on machinery and buildings increased in all four groups of farms. The increase for the 1958-63 period was 12 per cent on medium grain farms, 28 per cent on medium grain-cattle, 37 per cent on large grain farms and 16 per cent on large grain-cattle farms.

Financial Summary.—"Return to operator and family for labor, management and capital" was used as a measure of net returns. The returns were higher in 1963 than in 1958 on all farms of the same size and type because of higher crop sales in 1963 (Table 2). The increased scale of operation resulted in higher returns per acre of cropland to large than to medium farms.

In 1958 net returns averaged $3,607 per farm on medium grain farms and $3,173 on medium grain-cattle farms, and $5,336 per farm on large grains and $5,736 on large grain-cattle farms. The corresponding figures for 1963 are $5,336 and $5,736, and $5,222 and $6,123 respectively.

Summary

Some of the changes in farm organization, production operations, and financial handling of the farms were temporary adjustments that cannot be considered as reliable indicators of future trends. (They are overlooked in this summary).

Several other changes and trends were of a more lasting character. They may be brought together into one list as follows:

(1) larger but fewer farms

(2) further growth in cattle population, particularly on farms with well-established herds

(3) increase in the number of farms with no livestock and a corresponding reduction in the number of farms with livestock for home use only

(4) increase in the summerfallow acreage and a corresponding decrease in the acreage in stubble crops

(5) use of blade-type implements (cultivators and noble blades) and rodweeders on second and succeeding summerfallow operations in preference to disc-type implements (discer and oneway)

(6) decrease in the use of the harrow

(7) extensive use of weed spray

(8) use of grain elevators and seed-cleaning plants in preference to operator-owned seed cleaning facilities

(9) extensive use of dual-purpose seed treatment for control of seed-borne disease and wireworms

(10) increase in land values

(11) increase in number of diesel tractors in preference to gas tractors

(12) increase in the number of farm dwellings with water pressure systems

(13) increase in number of farms operated from towns and cities.

PUBLICATIONS OF THE ECONOMICS BRANCH

Tomatoes for Processing in Quebec. Girard, G. I., Ottawa. April 1964. pp. iii + 26.

A report on a study made at the request of the Agricultural Marketing Board of the Province of Quebec and in co-operation with that Board and the Tomato Growers' Board of the same province.

It is chiefly concerned with the production aspects of the tomato industry and markets for fresh tomatoes and canned tomato products in Quebec.

Starting Farming in Canada. Garland, S. W. Ottawa. May 1964. pp. 36.

A bulletin that answers the questions most commonly asked by people looking for information on how to begin farming in Canada. These questions pertain to: availability of farms for a beginning farmer, and for part-time farming; new areas that can be developed for farming; prospects for successful farming on Crown lands; types of farms in different regions; advisory and educational services available to farmers; credit facilities; capital returns and prospective income.

The bulletin also provides comments on some economic aspects of grain farms in Saskatchewan and Manitoba, grain-cattle farms in Saskatchewan, dairy farms in British Columbia and Ontario, beef farms in Ontario, cattle ranches in British Columbia, beef feeder farms in Ontario, large hog enterprise farms in Ontario, and general poultry farms in Ontario.

Marketing Boards in Canada, 1962. National Summary—Les offices de vente au Canada, Résumé national 1962. Ottawa, June 1964. pp. 10.

The sixth in a series of annual reports on the activities of agricultural producer marketing boards, other than the milk control boards, established under provincial legislation.

Canadian Agriculture in 1963. Ottawa. July 1964. pp. 23.

A record of changes in federal policies affecting agriculture and of important events relating to these policies, prepared by Miss F. Peschl of the Marketing and Trade Services Division.

Canadian Agriculture in 1964. A Chronology of Federal Policies. Ottawa. January 1965. pp. 28.

The seventh report in a series, started in 1952, which supplies "a chronological record of changes in federal policies affecting agriculture, and of the more important events related to these policies".

This report was prepared by Miss F. Peschl of the Economics Branch.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public
Information, United Nations, New York, U.S.A.
Sold in Canada by the Queen's Printer, Ottawa.

Handbook on Data Processing Methods.—Part II. Provisional edition. Prepared jointly by the Statistical Office of the United Nations, New York, and the Statistics Division, FAO of the U.N., Rome. 1962. pp. viii + 139. Price: $1.50.

Studies on data processing methods were undertaken to help less developed countries meet difficulties encountered in the processing of statistical data. Twelve studies were prepared. The following five have already been published as Part I of the Handbook on Data Processing Methods: (1) Scope and principal methods of data processing, (2) Planning, organizing and administering data processing service, (3) The elements of planning and operating a punch-card installation, (4) Manual methods and tools for data processing, and (5) Punch-card sorting.

The other seven studies are now being published as Part II of the Handbook under the following chapter headings: (1) Questionnaire Design (Processing Aspects); (2) Punch Cards—Their types and Design, (3) Punching Cards and Ensuring Quality of Punching, (4) Auxiliary Punch-Card Machines, (5) Punch-Card Tabulating Machines, (6) Construction of Codes, and (7) Controlling and Improving Data Processing Productivity.

Means of Adjustment of Dairy Supply and Demand. Commodity Bulletin Series, No. 37. FAO Rome, 1963. pp. 107. Price: $2.00

In June 1961 the Committee on Commodity Problems asked its Secretariat to study the means of adjusting dairy supply and demand. The researchers working on this project were to center their attention on "the present and prospective extent of the imbalance between world supplies and demand, the major causes of the disequilibrium, measures proposed by international organizations for balancing supply and demand, measures actually adopted in various countries, aspects of dairy problems in developing countries, and possible future remedial actions to achieve equilibrium."

Most of the work was done by Dr. Mirko Lamer and Mr. K. R. Ellinger of the Dairy Products Section of the Commodities Division. The first section of their report, The Problem, evaluates the extent of possible disequilibrium in the world dairy market in 1965 and 1970. The authors make projections of production, consumption and foreign trade, on the assumption that current trends in supply and demand and in national dairy policies will continue.

Section II, Major Causes of Disequilibrium, examines the major economic causes of the growing excess of supply over demand; it reviews national dairy policies, and considers the effects of dairy policies on production and consumption, and of dairy policies on international trade.

Section III is a Summary Review of Measures Adopted or Proposed and Section IV is a review of Measures to Balance the Dairy Economy. The latter section is organized into three parts. The first one deals with Measures Mainly Concerning Production, namely: Consumption in relation to production, Regulating production through changes in producer prices, Farm structure and producer reaction to price changes, Size and number of farms and production costs, and Quota systems as means of regulating production. The second part deals with Measures Mainly Concerning Consumption: Possibility of reducing butter surpluses by increasing the butterfat content of liquid milk, butter and cheese, Factors affecting consumption of liquid milk, butter and margarine, Developments in butter and margarine consumption, Factors affecting butter and margarine consumption—Legislation hindering margarine consumption, Retail prices of butter and margarine, Disposable income, Consumer habits, Other factors—Compulsory purchases of dairy products by producers, Introduction of new types of products and improvement of distribution facilities, Advertising for milk and milk products, Domestic welfare distribution of milk and milk products. The third part deals with Measures Mainly Concerning International Trade.

Section V reviews Some Aspects of the Dairy Situation in Developing Countries and Section VI examines Possibilities for Future Action such as Trade measures, Measures to increase consumption in advanced countries, and Measures to gear supply to demand.

Science and Technology for Development. Report of the U.N. Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas. New York. 1963.

A series of eight volumes which "represent the largest authoritative collections and the finest reference source of scientific and technological papers from 80 nations".

Volume I—World of Opportunity. Price: Cloth, $6.00; Paper $2.90
Volume II—Natural Resources. Price: Cloth, $7.50; Paper $5.25
Volume III—Agriculture. Price: Cloth, $8.00; Paper $5.50
Volume IV—Industry. Price: Cloth, $7.50; Paper $5.25
Volume V—People and Living. Price: Cloth, $7.00; Paper $5.00
Volume VI—Education and Training. Price: Cloth, $7.50; Paper $5.25

Volume VII—Science and Planning. Price: Cloth, $7.00; Paper $5.00

Volume VIII—Plenary Proceedings, List of Papers and Index. Price: Cloth, $9.00; Paper, $6.50

Government Gazettes. An annotated list of Gazettes held in the Dag Hammarskjold Library. U.N. New York. 1964. pp. iii + 50. Price: $U.S. 0.75.

A list of government gazettes, as of September 1964 Economic Commission for Europe. New York. 1964. pp. v + 121. Price: $U.S. $1.50.

The 1963 issue of the Bulletin contains a 14-page review of the Transport situation in Europe, organized under the following section headings: Volume of Transport in 1963, Networks, Mobile equipment, and Utilization of equipment, as well as 35 Statistical tables dealing with: General statistics, Passenger transport, Freight transport, Networks, and Mobile equipment and staff.

FAO Commodity Review 1964. FAO. Rome. 1964 pp. v + 141. Price: $3.00.

Part I, General Review, contains a summary of Major Developments in World Agricultural Production and Trade in 1963 and early 1964, and of International Agreements and Consultations.

Part II, The United Nations Conference on Trade and Development, is a brief account of the conference held in Geneva, March 23—June 16, 1964. The main points are: Principles of International Co-operation on Trade and Development, Expansion of Commodity Trade of Developed Countries, Trade in Manufactures and Semi-manufactures, Problems of Financing and Invisible Trade of Developing Countries, and New Intergovernmental Machinery on Trade and Development.

Part III has seven chapters supplying an analysis of the current situation and outlook for the major agricultural commodities, including fishery and forestry products.

World Energy Supplies, 1959-1962. Statistical Papers, Series J, No. 7. Department of Economic and Social Affairs, Statistical Office of the U.N. New York. 1964. pp. 120.

A statistical report on the production, trade and consumption of energy for about 170 countries with a combined population exceeding 3,150 million people in 1962.

The State of Food and Agriculture, 1964. FAO Rome, Italy. 1964. pp. ix+240. Price: $6.00.

The 1964 FAO report on The State of Food and Agriculture ccontains a World review and outlook of: agricultural production, changes in stocks, economic activity and the demand for agricultural products, food supplies and consumption, international trade in agricultural products, farm prices and incomes, consumer prices, and agricultural policies and development plans.

The 1963-64 season is the fifth successive one that did not record a significant change in world agricultural production, per caput. Excluding Mainland China, total agricultural production rose by only one to two per cent.

With regard to international trade, there was no market disparity in the growth of production for export and for domestic consumption. Disparities were more important on the demand side. The growth in demand was slow in the industrialized countries, that is, in the chief markets for exports of agricultural products, but a great deal more rapid, domestically, in the developing countries.

Prices of agricultural products have been rising since the end of 1962. On the whole, they have averaged eight per cent more in 1963 than in 1962. This rise in prices, however, did not necessarily mean a general improvement in the economic situation of farmers. Prices paid for production requisites, wages, interest, taxes and other farm expenses have continued to rise in all countries supplying information on farm costs.

In 74 of the 85 countries reporting, the cost of living was higher, on the average, in 1963 than in 1962. In several countries, the increase in retail food prices was greater than that in the general cost of living.

The report has a special chapter on Protein nutrition: needs and prospects.

The world's "protein gap" is difficult to estimate but it is undoubtedly so large that targets established for the next few decades will not be fulfilled. The answer to protein malnutrition can only be found in a type of economic development that will bring higher incomes to needy people.

The report has another special chapter dealing with Synthetics and their effects on agricultural trade.

The development of synthetic substitutes greatly limits growth in agricultural trade. Competition from the increasing production of these substitutes is a particular threat to the exports of agricultural raw materials such as cotton, wool, jute and allied fibers, had fibers, and rubber.

Monthly Bulletin of Agricultural Economics and Statistics. Vol. 13, No. 6, June 1964. FAO. Rome, Italy.

This issue of the Bulletin has Commodity Notes on: FAO meetings on Grains and Rice, the Common Dairy Policy of the European Community, and Condensed and Evaporated Milk.

In the note on the Common Dairy Policy we read that "As a result of the sustained expansion of milk production, the Community" has become "slightly more than self-sufficient in dairy products as a whole. It" has become "a net exporter of butter and also of considerable quantities of evaporated and condensed milk and milk powder, while remaining a net importer of cheese".

The Statistical Tables include a Special Feature: Trucks on Farms which notes the increase in the number of trucks on farms in Canada from 277,183 in 1956 to 302,012 in 1961.

Vol. 13, Nos. 7-8, July—August 1964. FAO. Rome, Italy.

This issue of the Bulletin features an article on "The Use of Agricultural Census Results as Basic Data for Planning, Formulating, and Appraising Agricultural Development Projects. It discusses the various aspects of planning at the national, segment or area, and farm levels.

The Commodity Notes include: Quarterly Notes on Commodity Markets; The World Beef Situation; and Developments in Rubber.

The Statistical Tables have, as a special feature, a table of FAO index number of per caput food and agricultural production, by regions, The other numbers of total food and agricultural production, by regions, and a table of FAO index numbers of per caput and agricultural production; The other tables contain data on production, trade and prices.

Volume 13, Number 9, September 1964. This issue of the Bulletin has an article by John M. Clark on "The Commodity Situation in Africa South of the Sahara, which deals not only with this situation itself but also with a new convention of association with EEC, African commodity organizations, and Future prospects.

It also has a Special Feature on "The United Nations Conference on Trade and Development", which is an extract from The State of Food and Agriculture, 1964, published by the FAO.

One of the Commodity Notes deals with "International Grain Prices in 1963-64".

Volume 13, Number 10, October 1964. Has an article on "The European Market for Eggs and the Problem of Surpluses", which is an adaptation from a paper, by E. L. Burtis and H. Habjanic, presented to the Second European Poultry Conference, held at Bologna, Italy, September 14, 1964.

This paper covers the following topics:
a) Short-term factors in the present crisis, b) Long-term factors: the modern system of production, c) Long-term factors: government supports, d) Policies and developments in importing countries, e) The pattern of European trade, f) Long-term factors: demand, g) Surplus potentialities likely to continue, h) How to handle the problem of surpluses—Strengthening consumer demand—Direct production controls—Dissemination of key information—Role of price—Conversion into products—Government disposal measures.

Vol. 13, No. 11, November 1964 Commodity Notes on Soft Oil: Current Situation and Outlook, and on National Dairy Policies, 1963-64.

Vol. 13, No. 12, December 1964 has an article on Land Reform as an Instrument of Change, with special reference to Latin America, which is a reprint of a paper by Alfredo M. Saco, delivered at Yale University on August 18, 1964. Mr. Saco gives special attention to the Principal economic changes expected from land reform, Major factors related to land tenure affecting agricultural development, The effect of income redistribution on the economy and Social justice and rural welfare.

The Commodity Notes deal with Bananas; Trends and Prospects, Instability and Stabilization of the World Market for Raw Jute—I, and International Trade in Grains in 1963-64.

OTHER PUBLICATIONS

Agricultural and Rural Development in Israel: Projection and Planning. Weitz, Raanan with the assistance of Avshalom Rokach. Bulletin No. 68: The National and University Institute of Agriculture. Division of Publications, in co-operation with the Settlement Department of the Jewish Agency. Rehovot, Israel. February 1963. pp. 148+XXXIX (Appendices).

As stated in the Introduction, this "work is an attempt to forecast general trends in future development, and to suggest ways of directing and coordinating agricultural policy in accordance with these forecasts."

The authors contend that, since comprehensive planning is based on the interpretation, comprehension and co-ordination of the mutual relationships between the economic, social, organizational, political, security and environmental aspects of agricultural and rural development, the "comprehensive planner" must concern himself with three separate systems, namely: 1) the distribution of the factors of production among the different sectors of agriculture in such a way as to achieve the best possible distribution of resources; 2) the distribution of these factors among the different settlements and farms to enable the average income of the farmer to move in line with the anticipated national income per capita; and 3) the relationship between town and country.

Weitz and Rokach give a steady and helping hand to this "comprehensive planner" with their skillful handling of matters relating to these systems.

In Chapter Two: The first System: Projection and Allocation of Agricultural Means of Production on a National Scale, they deal with the most important factors in this first system. In their opinion, the first decisive factor is agricultural know-how. They recognize that technological, agrotechnical and biological innovations have helped increase productivity and obtain greater yields and make better use of available water and manpower resources, and strengthen their viewpoint, in this regard, with a brief analysis of past and expected yields for the major farm products and of water and labor requirements. They proceed from this analysis to a brief review of the determinants of prices of agricultural products which have, as a logical sequence, an important effect on the structure of agricultural production, and then consider a third significant factor, in this system, the volume and capacity of domestic and external markets.

Weitz and Rokach end this chapter with a section on the projected Extent and Structure of the Various Branches of the Agricultural Sector in which they evaluate the relative profitabilities of the different branches, make projections of the supply of agricultural products, the structure of the agricultural sector of the national economy, the foreign currency balance, and supply data on the value of agricultural production and on the profitability of investments in agriculture.

In Chapter Three: The second System: Distribution of the Means of Production among Farming Units, they provide models of different types of farms and make proposals concerning the economic orientation of the Kibbutz (collective settlement). They also consider the "allocation of the various branches of agriculture among the farming units according to the required income and the results arrived at in the first system."

In Chapter Four: The Third System: Comprehensive Rural Development, they draw attention to some salient points and trends which directly affect the development of the rural areas of Israel, under the following sub-headings: Town and Country and the Present Meaning of 'Settlement'; Numbers Employed in Agriculture during the Development Period; Industry as a Stabilizing Factor in Rural Areas; and National Settlement Activities in Israel. They stress the fact that this third system is most complex and that its purpose is "to restore the internal equilibrium of the rural areas disturbed by the repeated crises experienced by them in this period of the affluent society".

In Chapter Five: Water: A limiting Factor?, they supply data on water supply and on water requirements for projected agricultural production.

Neue Hydrometrische Verfahren. Andrae, Horst. Director of the Hydrological Institute of Humboldt University in Berlin VEB Deutscher Verlag des Wissenschaften. Berlin, Germany. 1963. pp. 188 + 59 illustrations. Price: DM 34.

Dr. Horst's book will be of great interest to hydrologists, geologists, engineers, economists, and others concerned with the efficient use of land and water resources.

The hydrometric methods developed and described by Dr. Horst will add, immensely, to accuracy in measurements and will help bring a much tighter chronological sequence in these measurements.

Adjustments and Economic Planning in Canadian Agriculture. Harsany, Peter. Academic Publishing Co., Montreal, 1964. pp. 116. Price: $3.50.

This essay was originally presented as a discussion paper, at the Department of Agricultural Economics, Macdonald College, McGill University.

It discusses the position of the agricultural sector in the Canadian economy and the contribution of this sector to national prosperity, analyzes its economic characteristics, brings out the highlights of various studies of the outlook for developments in Canadian agriculture, ventures into an examination of the factors which condition economic planning in Canada, and ends with a suggested production pattern—"To project our planning to the year 2000"—without giving too many details to justify the suggested pattern.

Grass and Livestock Products: Present Performance and Future Prospects. Benyon, V. H., Department of Agricultural Economics, University of Exeter, 1, Courtenay Park, Newton Abbott, Devon, England. A reprint from the Journal of the British Grassland Society, vol. 19, No. 2, 1964, pp. 171-178.

In this paper Benyon discusses methods of grassland recording, the present output of grassland, changes in livestock prices/feed costs ratios, costs of producing crops, trends in grassland management, and profitability factors. In his concluding section, Future Prospects, he notes that "the skill required to produce and utilize grassland has been underestimated",—the Utilized Starch Equivalent "method of assessing the contribution of individual fields can provide misleading results, and perhaps more use should be made of the closely related but much simpler cow-day equivalent method,"—a "whole range of equipment has appeared in recent years, but no obvious breakthrough has been accomplished in efficient conservation of surplus grass. Unless a major improvement takes place shortly, the trend towards a low roughage/high concentrate diet will inevitably accelerate and barley will substitute for hay and silage on an increasing scale,"—and "more and more farmers in the wetter western parts of the country are finding barley-growing to their liking. This situation has been created because of the imbalance between livestock and crop prices coupled with the fact that cereal-growing techniques, particularly for barley, have overtaken our techniques of producing and utilizing grass".

Canadian Wheat in relation to the World's Food Production and Distribution. Anderson, Walton J. Sponsored by Alberta Wheat Pool, Manitoba Pool Elevators, Saskatchewan Wheat Pool. Distributed by Canadian Co-operative Wheat Producers Limited. Published by Modern Press, Saskatoon, Saskatchewan. 1964. pp. 100.

A report on an economic study of wheat production, distribution, and related problems, in the Canadian and world contexts. As stated in the Foreword "the purpose of this study is to contribute to a better understanding of where Canada's wheat production stands in relation to the dynamic forces of growth, changing world requirements for food and modern production possibilities."

In the first part of this report, Food Requirements and Surplus Production, the author reviews statistics on world food requirements and supplies, and on the adequacy of supplies; describes the most important food distribution programs for surplus disposal and economic development; considers the effects of food aid and its logic as an aid to development; and assesses the magnitude of capital aid requirements in underdeveloped areas.

In the second part, Considerations for an Expanded Canadian Wheat Disposal Program, he examines the commercial wheat export market and Canada's share in that market; reviews the wheat situation and policies of the major exporting and importing countries; assesses the competitive position of Canadian wheat in world and domestic markets; and considers problems relating to expansion in wheat production in Canada.

The report ends with a Concluding Note on Wheat Utilization and a Selected Bibliography.

Insurance for Farmers. Canada Department of Agriculture, Publication 1188. 1964. pp. 17. Available from Information, CDA, Ottawa.

An outline of the ways in which farmers' risks may be covered through fire, car and truck, liability, livestock, farm equipment, crop, health and accident, and life insurance.

Annual Report of the Agricultural Stabilization Board, 1963-64. Ottawa. 1964 pp. 9.

A report on "dollar value" of operations, and net cost of each program, of the Agricultural Stabilization Board for the 1963-64 fiscal year.

Oil Seeds and Wheat, 1961-1963. A Cost of Production Study on 104 Farms—Central Alberta, Peace River, Southern Alberta. Porter, K. D. and B. J. McBain. Cost of Production Section, Farm Economics Branch, Department of Agriculture. Edmonton, Alberta. 1964. pp. XII + 54 + 18-page Appendix.

An analysis of expenses incurred and income realized in the production of oil seeds and wheat in Alberta. Particular attention is given to land use, field operations and their costs, crop yields, land share arrangements, expenses, income, and net returns on selected farms in the Central, Peace River, and southern areas of Alberta. The Appendix consists of a series of statistical tables, graphs, and charts on prices, crop acreages and yields, field operations, costs and returns.

Demand and Production Analysis of Agricultural Products in Nova Scotia (1950 to 1972). Larsen, H. K. Voluntary Economic Planning. Halifax, Nova Scotia. April 1964. pp. iii + 46.

A study which deals chiefly with the main variables affecting the consumption, and the production, of agricultural food products in Nova Scotia.

The 15 commodities studied may be broadly grouped as follows: red meat, poultry products, dairy products, fruits, and vegetables.

As noted by Larsen, in his Summary and Conclusions, "the consumption pattern of Nova Scotia does not differ widely from that of other North American regions." He foresees a considerable expansion in local demand for food in the coming decade, because of an increase in population, in average levels of living, and in tourism. The Nova Scotia market for farm products is fairly stable. Nova Scotians consume most of the farm products produced in the province and their market enjoys a degree of protection against outside competition, owing to its "location monopoly".

Nova Scotia Butterfat—Hog Farms, Business Analysis, 1963. A study of 14 Farms. Byers, Douglas M. and Jean E. Ward. Farm Management Division and Extension Services Branch, Nova Scotia Department of Agriculture and Marketing. Truro. June 1964. pp. 6.

A report on expenses, income, farm investment and comparative efficiency for a group of 14 butterfat-hog farms in Nova Scotia.

Variations in Canadian Cattle Inventories and Marketing. Marshall, R. G. Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. June 1964. pp. ii + 63, incl. 13 tables and 19 graphs.

A description and analysis of variations in beef production in Canada, over the long run, and an economic interpretation of the changes that have occurred during the 1950-1962 period.

Marshall organizes his discussion under the following headings: Trends in Cattle Inventories and Output; The Cattle Cycle; The 1950 to 1962 Period; and Seasonal Variations in Marketing.

Eastern Nova Scotia Dairy Farm Business Analysis, 1963. A study of 44 Dairy Farms. Byers Douglas M. and Jean E. Ward. Farm Management Division and Extension Services Branch, Nova Scotia Department of Agriculture and Marketing. Truro. July 1964. pp. 7.

A brief analysis of farm investment receipts, cash expenses, and efficiency ratios for a group of low-income and a group of high-income farms in Nova Scotia.

Dairy Farm Business Analysis, Western Nova Scotia, 1963. Byers, Douglas M. and Jean E. Ward. Farm Management Division, Extension Services Branch, Nova Scotia Department of Agriculture and Marketing. Truro, Nova Scotia. August 1964. pp. 7.

A "collective summary of the 1963 performance of 63 dairy farms located in the 12 Western counties of Nova Scotia who participated in the Farm Management program", to which were added 11 farm records supplied by the Veterans' Land Act Administration.

An Analysis of the Nova Scotia Apple Industry (1930-1972). Mulder, N. G. Voluntary Economic Planning. Halifax, Nova Scotia. September 1964. pp. 68.

A study concerned with the history and the growth and adjustments problems of the apple industry in Nova Scotia, as well as with the demand for and the supply of apples. Its 27 statistical tables, in the Appendix, provide a wealth of detailed information on the apple industry in Nova Scotia, Canada, the United States, the United Kingdom, and elsewhere, all relevant to production and marketing possibilities for Nova Scotia apples.

A statistical Report on the New Brunswick Economy. Published by the Office of the Economic Adviser, Government of New Brunswick, Fredericton, New Brunswick September 1964. pp. 17.

The first in a series of annual reports that will serve as "basic" reference documents. Each annual report will be complemented by quarterly reports supplying statistical data and some brief analytical material.

The first annual report contains 40 statistical charts and graphs, supplemented by statistical tables, on population, employment, income, production, housing, farm prices, farm capital, farm income, farm machinery, livestock and poultry, field crops, retail trade, consumer prices, railway freight traffic, household facilities, and other matters of economic interest.

B

THE ECONOMIC ANNALIST

FEBRUARY-APRIL 1965

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DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS BRANCH

S. C. HUDSON, Director-General

FEBRUARY-APRIL 1965 **Vol. XXXV Nos 1-2**

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G. P. BOUCHER, Editor

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Minister of Agriculture

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935–39=100							1949=100		
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937..........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945..........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953..........	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955..........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956..........	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957..........	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958..........	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959..........	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960..........	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961..........	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962..........	240.0	240.8	195.5	286.0	272.0	290.7	234.9	130.7	126.2	186.1
1963..........	244.6	236.3	197.2	275.4	268.4	298.6	237.4	133.0	130.3	196.2
1964..........	245.4	227.3	187.3	267.3	258.0	308.6	243.5	135.4	132.4	213.8
1964										
Jan...........	246.5	231.1	198.0	264.2	264.1	301.1	242.1	134.2	131.4	210.3
Feb..........	246.2	231.3	196.3	266.2	265.5	....	....	134.5	131.3	212.4
Mar..........	245.3	230.3	195.4	265.6	266.0	....	....	134.6	131.3	210.1
April.........	245.5	230.7	196.4	265.0	266.2	311.6	244.1	135.0	131.8	214.1
May.........	245.9	234.4	201.4	267.4	267.9	....	....	135.0	131.2	210.2
June..........	245.4	242.7	211.4	273.9	274.1	....	....	135.3	132.5	211.0
July..........	245.0	239.1	209.7	268.4	272.2	....	....	136.2	135.4	211.6
August.......	244.9	221.1	172.1	270.2	248.9	313.1	244.2	136.1	135.1	214.6
Sept..........	244.3	215.9	162.2	269.6	245.9	....	....	135.6	132.7	214.4
Oct...........	244.3	214.7	163.7	265.7	241.0	....	....	135.6	131.0	215.1
Nov..........	244.9	215.8	166.0	265.7	240.9	....	....	135.9	132.0	220.9
Dec..........	246.0	220.3	175.1	265.5	243.1	....	....	136.8	133.2	221.1
1965										
Jan...........	246.8	222.5	182.5	262.5	244.7	309.6	246.8	136.9	132.5	224.3
Feb..........	246.4	224.9	182.1	267.7	250.7	....	....	137.2	133.1	223.1
Mar..........	246.8	225.0	180.3	269.7	251.3	....	....	137.3	133.3	226.7
April.........	247.6	228.7	185.4	272.1	254.8	321.8	248.1	137.7	133.4	225.6

Note:—See earlier editions for index numbers previous to 1926.

Souce:—Dominion Bureau of Statistics, Ottawa.

[a]1965 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

Gross National Product.—Canada's G.N.P. in the first quarter of 1965 rose to a seasonally adjusted annual rate of $49.7 billion, 3.5 per cent above the level of the preceding period. Prices were 0.7 per cent higher but the major part of this increase represents a gain in real terms. Gross national product, excluding accrued net farm income, rose in line with gross national product as a whole.

The current expansion, which has now been in progress for 16 quarters, continued. The forward impetus in the first quarter came from a fairly broadly-based increment to final domestic demand strongly reinforced by a substantial building up of stocks. As in the fourth quarter, the deficit on current international account rose sharply. In the first quarter, this development was attributable to the rise in imports.

Of the components, accumulation of business inventories made the largest contribution to the rise in economic activity, accounting for $0.9 billion of the $1.7 billion increase in the G.N.P. The magnitude of this build-up was in part attributable to the sequence of events in the automotive industry. Strikes, first in the United States and then in Canada, had interrupted production in the fourth quarter of 1964 and into the first quarter of 1965 with the result that stocks of new cars became depleted and were built up when the industry reached record levels of production late in the course of the first quarter of 1965. A considerable build-up also occurred in the non-durable manufacturing industries.

A further expansion in investment in plant and equipment indicated the underlying strength of demand and the confidence engendered by it. The increase in outlays for capital goods by the business sector accounted for about one-third of the advance in gross national product.

Consumer spending continued to rise but not nearly so much as income available for spending. The strength in the market for cars no doubt reflects, in part, the backlog of demand that had been built up in the preceding period. Further support to the economy came from higher government expenditure for goods and services and somewhat larger outlays for housing.

As in past periods of strong demand and heavy capital investment, imports rose sharply and in spite of some increase in exports the surplus on merchandise account disappeared. The deficit on service account narrowed appreciably but the over-all deficit was the largest in some years.

Gross national expenditure, seasonally adjusted at annual rates, may be summarily described as follows:

	1964 (fourth quarter)	1965 (first quarter)
Consumer expenditures	30,148	30,588
Government expenditures	8,796	9,060
Residential construction	2,128	2,204
Non-residential construction	3,588	3,928
Machinery and equipment	3,664	3,896
Value of physical change in business inventories	48	952
Farm inventories and grain in commercial channels	184	−44
Exports of goods and services	10,404	10,512
Imports of goods and services	−11,076	−11,572
Residual error	132	152
Gross National Expenditure	48,016	49,676

There were some interesting developments on the income side in the first quarter. Labor income recorded one of the largest quarterly gains in many years. Corporate profits were a little above their unusually high fourth quarter level.

Personal income rose much more sharply than National Income. This disparity is mainly a consequence of the extraordinarily large payments made to farmers by the Canadian Wheat Board. This bulge in income was undoubtedly an important element in the pronounced rise in the rate of personal saving.

Balance of Payments.—The first quarter of 1965 was a period of continued rising levels of economic activity in both Canada and the United States and in some other countries, and this was reflected in record levels of international trade for the winter period. Among events of special significance for the balance of payments was the announcement by the United States' Administration of a series of measures designed to reduce the imbalance in the United States balance of payments. The more discernible effects of these policies during the quarter on the Canadian balance of payments were in certain groups of capital flows.

At $408 million, Canada's current account deficit in the first quarter of 1965 widened by $65 million over the first three months of 1964. The latest deficit was higher than that for any first quarter so far in the sixties.

Capital movements in long-term forms brought in $148 million in the first quarter and those in short-term forms brought in $188 million. Canada's official holdings of gold, foreign exchange and International Monetary Fund balance fell by $72 million.

The increase in the current account deficit was attributable wholly to the worsening in the trade balance. When adjusted for balance of payments purposes, this registered a change of $90 million from a surplus of $33 million to a deficit of $57 million in the March quarter of 1965. This trade deficit is the first since the second quarter of 1962, when the import balance stood at $40 million.

Despite a drop of nearly $60 million in the shipments of wheat and flour on Russian account between the first quarters of 1964 and 1965, merchandise exports increased by $95 million to $1,825 million, while merchandise imports expanded by $185 million to $1,882 million.

The deficit of non-merchandise transactions declined $25 million to $351 million, a level about midway between $376 million for the first quarter of 1964 and the average for the same period of the three preceding years. The decline originated from improvements in the balances of travel, income migrants' funds, government defence expenditures and gold production available for export. As an offset, official contributions increased, and the deficit on freight and shipping account widened slightly.

More than 30 per cent of Canada's substantial deficit on current transactions with the United States in the first quarter of 1965 was covered by the surplus with overseas countries.

Canada's net payments on current account exceeded the net inflow of capital in long-term forms by $260 million in the first quarter of 1965. This balance was smaller than the corresponding figure of $379 million in the comparable period of 1964. Inflows in long-term forms included $248 million from the sale of new issues of Canadian securities but other security transactions involved outflows aggregating $182 million. Other inflows in long-term forms included direct investment flows and bank borrowing.

In the first quarter of 1965 Canada experienced a deficit on current account with the United States of $595 million and received from that country net capital inflows in long-term forms aggregating $203 million. However, a net capital outflow to the United States in short-term forms (even after a significant drop in private deposits of Canadians in United States dollars) offset most of the inflow from that country in long-term forms, leaving a massive balance. Settlement of this was achieved in part by drawing down official holdings of United States dollars and in part through a substantial withdrawal of funds from the rest of the world, arising to a considerable extent from the important international operations of the Canadian banking system.

Canada's official holdings of gold and foreign exchange fell by $118 million in Canadian funds in the first quarter of 1965, the first quarterly drop in these assets since the corresponding period of 1964. Gold and United States dollar holdings declined by $130 million while holdings of sterling increased by $12 million. Canada's net balance with the International Monetary Fund increased in the quarter by $46 million.

Domestic Exports.—Canada's commodity exports rose to $388 million in April 1965 from $359 million a year earlier, and to $1,425 million in January-April 1965 from $1,285 million in the corresponding period of 1964.

Domestic exports to the five largest importers of Canadian products were as follows:

	April		January-April	
	1964	1965	1964	1965
		— 000 —		
United States	$359,082	$387,806	$1,285,385	$1,424,634
United Kingdom	95,817	84,513	361,875	348,692
Japan	24,152	29,353	101,029	97,561
Germany, Federal Republic	17,651	11,801	60,726	49,654
Australia	14,447	11,361	40,660	42,979

Industrial Production.—Canada's seasonally adjusted index of industrial production (1949=100) dropped to 225.6 in April from 226.7 in March 1965.

Non-agricultural real input in the first quarter of 1965, at an index level of 205.4 (1949=100), was 2.2 per cent higher than in the fourth quarter of 1964, after removal of seasonal influences.

During the first quarter of 1965, the current cyclical expansion in production was in its sixteenth consecutive quarter and non-agricultural output had reached a level 27 per cent above the cyclical trough in the first quarter of 1961.

Manufacturing, trade and construction were the largest contributors to the gains in non-agricultural output in the first quarter of 1965; manufacturing accounting for almost one-third of the advance and the other two groups for about one-fifth each.

Employment.—Canada's industrial composite index of employment (1949=100) rose to 131.8 in April from 130.9 in March 1965. Construction, transportation, storage and communication and service increased markedly but the rise in construction was much less than expected at this time of year. Forestry and mining recorded market reductions; the decrease in forestry reflected the completion of the winter-cut in Eastern Canada and the reduction in mining resulted from the usual cutbacks in oil and gas drilling in western Canada, owing to road bans necessitated by spring thaws.

The industrial composite of average weekly wages and salaries rose to $90.53 in April from $90.22 in March 1965 and $86.33 in April 1964.

Labor Income.—Canada's paid workers received about $2,068 million in April 1965, in salaries, wages, and supplementary income, as compared with $2,035 million in March 1965 and $1,870 million in April 1964. The January-April total rose to $8,092 million in 1965 from $7,348 million in 1964.

General Wholesale Prices.—Canada's general wholesale index (1935-39=100) rose to 249.2 in May from 247.6 in April 1965 and 245.9 in May 1964. An increase to 260.1 from 256.5 in the animal products group index was chiefly attributable to higher prices for milk and milk products, livestock, fresh and cured meats, and hides and skins. A rise to 201.3 from 200.6 in the chemical products group index reflected higher prices in May for organic chemicals, inorganic chemicals, and fertilizer materials. The vegetable products group edged upward to 219.4 from 219.2.

Consumer Prices.—Canada's consumer price index (1949=100) rose to 139.0 at the beginning of June 1965 from 138.0 a month earlier and 135.3 in June 1964. The 1965 May to June increase stemmed chiefly from a 2.3 per cent in the food component of the index; index components for housing, clothing, transportation, and recreation and reading were slightly higher in June than in May.

The food index rose to 137.6 from 134.5. Prices were much higher for beef and pork, most fresh vegetables and grapefruit. Other price increases were reported for a wide variety of items including veal, chicken, butter, cheese, peanut butter, tea, apples and grapes. Prices were lower for eggs, fresh tomatoes, oranges and orange juice, and coffee.

Farm Prices.—Canada's index of prices received by farmers from the sale of farm products (1935-39=100) rose to 258.2 in May from 254.2 in April 1965. The gain resulted from higher prices for livestock and potatoes.

Farm Wages.—Average annual wages of male farm help, with board, rose to $1,670 at May 15, 1965 from $1,560 a year earlier; wages without board rose to $2,340 from $2,125. The average annual wage, with board, rose to $1,590 from $1,465, in the East, and to $1,760 from $1,665 in the West. Corresponding figures, without board, were $2,305 and $2,075 in the East and $2,375 and $2,175 in the West.

Monthly average wages of male help, with board, rose to $154 in May 1965 from $143 in May 1964, and wages, without board, to $198 from $188.

Wheat Exports and Supplies.—The total of 1,113.8 million bushels of wheat and flour exported from Canada, the United States, Argentina and Australia in the August-April period of the current Canadian crop year represents a decrease of 16 per cent from the previous record level of 1,326.6 million exported in the corresponding 1963-64 period but increases of 28 per cent from the 868.8 million of two years ago and 53 per cent from the 1953-54 to 1962-63 ten-year average of 725.8 million. August-April shipments from the four countries, in millions, with figures for the previous crop year in parentheses, were: United States, 531.5 bushels (649.0); Canada, 298.5 (398.5); Argentina, 123.0 (71.4); and Australia, 160.8 (207.7).

Supplies of wheat held by these four countries at May 1, 1965 for export and for carryover at the end of their respective crop years, totaled 2,009.2 million bushels as compared with 2,000.1 million a year earlier. Larger supplies in Argentina and Australia more than counterbalanced smaller supplies in the United States and Canada. May 1 stocks, in millions, with figures for the previous crop year in parentheses, were: United States, 988.9 bushels (1,045.6); Canada, 606.4 (655.5); Argentina, 212.4 (158.4); and Australia, 201.5 (140.6).

Wheat Flour Output and Exports.—The wheat flour output rose to 3,083,000 hundredweight in May 1965 from 3,319,000 cwt. in April 1965 and 3,881,000 cwt. in May 1964. The output for the first ten months (August-May) of the current Canadian crop year totaled 32,718,000 cwt. and that for the corresponding period of the previous crop year totaled 42,232,000 cwt. Wheat flour exports declined to 1,208,000 cwt. in May 1965 from 2,063,000 cwt. in May 1964, and to 10,348,000 cwt. in the August-May period of the current Canadian crop year from 20,377,000 cwt. in the previous corresponding period.

Milk.—Milk production in Canada, in May 1965, was estimated at 1,779 million pounds, a 4.2 per cent rise from the 1,524 million pounds produced in April. The January-April total rose to 4,864.6 million in 1965 from 4,836.6 million in 1964.

Eggs.—Egg production rose to 39,850,000 dozen in May from 38,283,000 in April 1965, and to 194,630,000 dozen in the 1965 January-May period from 187,507,000 dozen in the corresponding period of 1964.

THE MINISTER'S VIEWS ON THE CANADIAN LIVESTOCK INDUSTRY

In a speech, at the annual dinner of National Livestock Exchange and Stockyard Managers, in Toronto, May 6, 1965, the Minister of Agriculture made the following remarks on the Canadian livestock industry:

> "I think we all appreciate the importance of the livestock industry to Canadian agriculture as a whole and to the Canadian economy as a whole. But in doing a little homework for this speech, I found some of the facts about stockyards quite interesting and I thought it would be worthwhile to spend just a few minutes reviewing the place of public stockyards in our livestock industry.
>
> "We now have a total of ten public stockyards in Canada—two in Montreal, and one each in Toronto, Winnipeg, Regina, Saskatoon, Prince Albert, Edmonton, Calgary and Lethbridge. The importance of these stockyards to our livestock industry is indicated by the fact that for several years now about 30 per cent of all farm cash income from livestock has come from sales through your facilities.
>
> "My Department has been very much involved in the operation of our public stockyards for a good many years. Under the livestock and livestock products act established in 1939, my Department was assigned by Parliament to set out the regulations governing stockyard operations. These regulations cover the equipment and accommodation at public stockyards, the records to be kept, the financial security required of commission merchants, co-operative associations and dealers, the shippers' trust account, the general trading requirements. The point of all these regulations is to ensure ethical trading practices which are essential to buyers and sellers alike who want to operate on a sound basis.
>
> "Basically, the public stockyards provide a place where a producer can sell his livestock subject to a laid-down and supervised set of conditions. My Department's livestock market reports are issued only at public stockyards, and only at public stockyards are accurate records of all sales readily available. All of these factors have contributed to the position now enjoyed by our stockyards in the livestock industry.
>
> "It is often said that prices are set at the public stockyards.
>
> "Although not all cattle and calves are offered for sale on public stockyards, there is sufficient volume to establish a going market price. On cattle delivered direct to a plant, or sold at country auction markets, the prices received are compared to the quotations on the public stockyards. In other words, prices at the public stockyards provide a bench mark and in effect, make what is referred to as the "market". The public stockyards also play an important role in the export trade to the United States, particularly of feeder cattle, because they have facilities for assembling and making up loads and doing the testing that is required. Last year, 54.2 per cent of all cattle and 53 per cent of all calves marketed in Canada were marketed through public stockyards.
>
> "I would like to spend a few minutes now discussing some of the highlights of the cattle industry in Canada last year. I think the most important trend was the increase in per capita consumption of beef. It amounted to an extra 4.9 pounds per person, an increase of 10 per cent from 73.8 pounds in 1963, to 78.7 pounds in 1964.
>
> "I suppose this is a good place to pause for a little political haymaking and point out that this increase in beef consumption is just one more reflection of the prosperity our whole economy is enjoying at the present time. I think it is also a good object lesson to illustrate how interlocking the Canadian economy is. When we speak of returns to farmers, we refer not only to prices but also to the volume of sales. Our

livestock prices were not as strong as we would have liked them to be at some periods over the last few months. But because most Canadians were a little more prosperous, and were eating better than ever our volume of beef sales rose and went a long way toward offsetting the lower prices in total returns to our producers.

"It seems to me that this is the sort of experience which is teaching us that when action is taken to improve the economic lot of any group of Canadians, the final result is that it helps to improve the lot of all of us. When the workers in our cities are employed and making good money, they have more to spend on food and in spite of the cuts taken out of this spending along the way from the retailer to the producer, it does means more in the producers' pocket—everything else being equal.

"Another important trend in the cattle industry last year was a dramatic increase in the demand for Reds and Blues. In 1950, the weekly average kill in these two top grades of beef was only 4,146 carcasses. Last year, an average of 25,300 reds and blues were slaughtered every week representing 54.3 per cent of the total weekly kill. This was a continuation of the trend in 1963 when the weekly average slaughter of reds and blues was 21,306 carcasses, or 52.2 per cent of total slaughterings.

"There were some unusual happenings in our cattle industry last year, too.

"During the early part of the year our prices rose to the point where for the first time in years they were higher than U.S. prices—so much higher, in fact, that they made it worthwhile for American producers to ship their cattle to our markets. We imported a total of about 31,000 head of slaughter cattle in 1964—virtually all during May and June. This was the first time we had imported any substantial number of American slaughter cattle since 1959. There was also a record movement of western feeder cattle into Ontario in 1964—an estimated 329,000 head. Because of the price and supply situation in Canada and the United States, last year also saw a sharp drop in our exports to about 91,000 head, from about 350,000 in 1961 and 1962 and 157,000 in 1963.

"I think some of these facts illustrate again just how important the over-all health of our economy has been to our livestock industry. It has meant an increase in beef consumption substantial enough to absorb a decline in our feeder exports in the vicinity of 250,000 head. In spite of this export decline, estimated cash income last year from the sale of cattle and calves amounted to some $645 million, or about 18.7 per cent of total estimated farm cash income. The percentage of total farm cash income this represented was down slightly from 20 per cent the previous year. But the actual dollar figure was up from some $638 million in 1963. This is explained, of course, by our record wheat sales which raised the portion of farm cash income provided by wheat to 27.2 per cent last year compared to 22.6 per cent in 1963.

"But just to illustrate the importance of our whole livestock industry to Canadian agriculture, I should point out that in spite of our great wheat sales all of our crops accounted for only about 45.3 per cent of total farm cash income last year, while livestock and their products, including dairy products, poultry and so on, accounted for 53.5 per cent. The domestic market is, of course, the most important market for our livestock and our livestock products. Our exports of these products last year amounted to only 12.6 per cent of our total agricultural exports which is important but may be not as much as we could export if we specialized a little more in the products we can produce best in Canada.

I have said this before but I think it bears repeating. I believe Canadian livestock has excellent prospects for becoming a major source of top breeding stock on world markets in the future. We can produce the best livestock in the world in Canada and we are already doing this to a considerable extent. But I believe we can do even more and we in the federal government are working on a few ideas to encourage this trend. I think Canada can become a leading world source of breeding stock if we really set our minds to it and work at it. It was with this in mind that we revised the show classifications which have been used for so long at all our major farm fairs and exhibitions. We have worked out a revised list of these classifications for purebred beef and dairy breeds and my Department now offers to match prize money at any major fair or exhibition introducing these new classifications. We believe these new classifications are based on the kind of utility principles, the idea of the most efficient food production possible on the hoof, which can help Canada become a leading world supplier of seed stock.

"In the interests of promoting more Canadian livestock exports, we are opening at the Central Experimental farm in Ottawa a Canadian livestock showcase where trade missions to Canada can see at first hand right in our Capital examples of the best animals available in this country. We are starting with cattle representing the four main dairy breeds. But we intend to expand this display herd to include examples of the best we have to offer in beef cattle, in hogs, in sheep, in poultry, in seeds and grains and any other farm products we think can be sold on world markets. Later this year we also plan to send overseas a travelling exhibition of Canadian livestock which will be equipped to set up in smaller rural communities in Europe and give the farmers over there a chance to see for themselves what we have for sale in this country. I think we can do a lot better job than has been done so far in promoting the sale of our agricultural products abroad and our government intends to see that a better job of this promotion is done.

"In closing, I would like to devote just a minute or two to the outlook for the livestock industry during the next few months as it looks to the experts in my Department. The fed cattle supply will be sharply smaller in total than a year ago until September. From October through December, the supply should be no larger and possibly a little smaller than last fall. There will be a scramble for feeders because they won't be any more plentiful than they were a year ago. This means a reduced supply of feeder steers not only in feed lots but also available for feeding.

"The prices for finished cattle likely won't drop below about $24.00 per hundred for choice steers at Toronto next fall. The next big increase in feedlot numbers will have to come from the 1965 calf crop. This means a wait until the summer or fall of 1966 to get a big boost in fed cattle output. And, of course, all of this I am pleased to say, adds up to a price outlook that is definitely bullish.

"To make the picture even a little brighter cattle prices now have hog prices going for them, too. The hog outlook in the United States which, of course, has a great bearing on our own industry's prospects, is just the opposite of a year ago. Last year the prices of hogs and cattle were working against each other. But this year hog prices are moving up in the U.S. and the price will be strong until at least late 1966.

"The corn-hog ratio will not likely start increased breedings until next November. This would mean the next big increase in farrowings in the March-through-May period of 1966, and the first big increase in marketing from October through December of 1966. The U.S. trade is forecasting hogs to be $17.00, live weight or better, for the next 18 months. In terms of Canadian prices this should keep the increased marketings forcast from having a detrimental effect on Canadian prices."

PRESENT STATUS OF FOOD CONSUMPTION STATISTICS[1]

L. E. DRAYTON and J. M. GRAY[2]

Food consumption statistics are published in various reports of the Agriculture Division of the Dominion Bureau of Statistics. The annual report, Dairy Statistics, for example, contains detailed information on consumption of dairy products in aggregate and per person. Livestock and Animal Products Statistics provides corresponding data for meats and Production of Poultry and Eggs, for poultry products. Some of these data are first published in the Quarterly Bulletin of Agricultural Statistics.

These various statistics are consolidated for the annual special compilation of "Apparent Per Capita Domestic Disappearance of Food in Canada" together with data on consumption of certain food products not published in other reports. This compilation, which also appears in the Canada Year Book covers a very wide area. The Agriculture Division also compiles Food Balance sheets on a crop year basis for the FAO of the United Nations.

Perhaps criticism is the essence of useful comments and, if so, when examining a statistical series such as that on per capita consumption one looks for weaknesses or gaps, as much as for strong points or the overall value of the series. By doing so, he is obviously better able to strengthen or help others strengthen the series.

Accuracy.—Statistical estimates are always subject to error of one type or another. Not only is it usually impossible to avoid some error, but one must bear in mind that increases in accuracy may mean more than proportional increases in costs, and that the time-consuming search for accuracy may not warrant the loss in timeliness that ensues from the delay in publication. Statistical data for some of the commodities make it difficult to reach the very highest standards of accuracy because these statistics, for the most part, consist of residual figures. For some commodities, annual disappearance is equal to stocks at the beginning of the year plus production, plus imports, minus exports, minus non-food uses, minus waste, minus year-end stocks. If domestic disappearance is small in relation to some of the basic figures from which it is derived, errors in the latter are apt to be magnified.

Not all figures on food use are of the residual type, as many agricultural products are processed before being used as food. One of the best examples is grain milling. Wheat flour production rather than wheat crop production becomes the basis for the estimate of wheat consumption. It is assumed that more accurate data can be obtained from a limited number of processing organizations than from a much larger number of farm producers. When the entire universe is covered, there is no question of sampling or sampling error. Nevertheless, complete coverage is not a firm guarantee against other kinds of statistical errors.

A large proportion of some other products, such as fluid milk, is commercially processed. Thus, data on the volume which is commercially processed may serve as a reliable check on the consumption estimate. The recent revisions in fluid milk consumption estimates resulted from evidence that the proportion of that milk which was commercially pasteurized had been previously underestimated and not from any lack of accuracy in the reporting of pasteurized milk.

The categories of foods for which processing data do not provide a good starting point for consumption estimates is narrowing but still important.

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[1] Adapted from a paper presented at the Sixteenth Federal-Provincial Conference on Agricultural Statistics, February 16 and 17, 1965.

[2] Mr. Gray is Chief, Special Crops Section, Agriculture Division, Dominion Bureau of Statistics.

They include fresh fruits and vegetables, eggs, and to a lesser extent, meats. Of an estimated 2.65 million head of cattle slaughtered in Canada in 1963, 2.13 million were reported as slaughtered in inspected establishments. The remaining 0.42 million head were slaughtered by farmers, local butchers and other establishments not subject to inspection. The estimates of this latter quantity are much more subject to error than the reports of inspected slaughter. However, just to use an example, even a 25 per cent error in the estimates of uninspected slaughter would lead to an error of only four per cent in the total. A more significant problem may relate to conversion factors and cut-out and waste factors.

With respect to fruits and vegetables, there are two serious problems, apart from the accuracy of the original crop production estimates. The first of these is the matter of production for home use. In the past no allowances were made for non-commercial fruit production while arbitrary figures were introduced for vegetables. Nothing can be done, so it seems, to prepare estimates for this type of production until some basic questions are included in a census schedule. No arrangements have been made to include such items in the 1966 Census. The question, of course, arises as to whether or not collecting such statistics would justify the expenditure of considerable resources as it would be a complex and costly project. At the present time, considerations is being given to dropping the home production segment of the vegetable estimates.

The other problem concerns waste. Fruits and vegetables are of such a nature that losses undoubtedly occur between producer and consumer. Certain waste factors which were established over 20 years ago are still being employed to make allowances for such losses. However, the produce industry has not stood still and it would seem reasonable to suggest that these factors need updating. A considerable amount of research would have to be undertaken much of it with experimentation and inspection agencies of the Department of Agriculture. One should stress the need for some original work in this area. Setting up a new base for the old factors without having re-examined their validity, would be of little use. This is an area where provincial Departments of Agriculture could also play a part. In fact, some of them are already at work. The Vineland Experimental Station in Ontario, for example, has undertaken some thorough studies on packing and shipping techniques for peaches.

Allied to estimates of losses through wastage is the question of conversion factors for calculating fresh equivalents, etc., and for calculating the weight of volumetric units. Much the same can be said here as for wastage factors. A limited investigation undertaken by the Agriculture Division, D.B.S., in co-operation with the Ontario Department of Agriculture a few years ago, largely confirmed the allowances being used.

Timeliness.—The annual statement "Apparent Per Capita Domestic Disappearance of Food in Canada" for 1962 was released only in June 1964. Much greater speed was displayed the following year. In contrast, the U.S.D.A. released preliminary estimates of food consumption for 1964 in November, of the same year. Preliminary indications of expected consumption were published some months earlier. Of course, preliminary Canadian estimates for 1963 have been available for some months for meats, dairy products and poultry and eggs. For the other foods such estimates were released under a January 1965 dateline.

Nevertheless, for the efficient use of food consumption data in considering matters of policy we need data for as current a period as possible. Knowledge of recent developments is more valuable than data for the irretrievable past.

The problem of timeliness is not a simple one. Each component in the food consumption equation is needed for computations. Delays in obtaining one figure for one commodity mean a corresponding delay in the final calculations for all commodities.

Regional Variation.—There has been growing pressure for food consumption estimates by province or region. The main barrier in developing these estimates has been the inadequacy of transportation statistics for measuring net movements of specific foods among provinces. A considerable volume of food moves in mixed carlots and truck data are limited to small samples only. It would be a difficult and costly undertaking to develop transportation statistics to the point where they provided satisfactory estimates of the interprovincial movement of each food category.

An alternative approach may be more practical. From time to time the Prices Division of D.B.S. conducts Urban Family Food Expenditure studies in a few major cities. If these were supplemented by similar studies in smaller urban centres and rural areas and if quantity data as well as expenditure data were obtained these studies would provide a picture of regional variations in food consumption patterns. As they would measure foods in terms of retail units rather than primary distribution weights and would not include food eaten in public eating places and institutions they would, no doubt, diverge somewhat from the estimates derived from aggregative data. Nevertheless, index factors could be worked out for each region to derive regional consumption statistics which would correspond to the national data. As changes in basic regional food consumption patterns would be gradual, the benchmark thus established could be used for five to ten years.

These studies could also provide a valuable cross-check on some of the national estimates of food consumption. Where the estimates of the household study diverged considerably from the estimates of aggregative data both could be re-examined with care to determine causes of such divergence. On occasion, such examination might well lead to improvement of the aggregative data, especially with those products where waste factors and self-supplies have to be considered but are not really known.

Conference on Agricultural Statistics in 1964.—At the 1964 Federal-Provincial Conference on Agricultural Statistics it was recommended that an investigation be made into the needs and feasibility of special surveys dealing with the consumption of foods and that a more thorough analysis of consumption data now available be undertaken. The Agriculture Division of D.B.S. has reviewed, as far as possible, the data on family expenditures now being collected by the Prices Division. However, the Economics Branch of the Canada Department of Agriculture did carefully study this source of statistical data, in the past, and found it impossible to associate quantities with estimated expenditures reported by respondents to the Branch's survey. At an interdepartmental meeting held in July there was general agreement on the need to provide data on food consumption patterns by different income groups, by region, and by type of community. Such a program would require a very heavy expenditure of resources and no final decisions have been arrived at concerning the nature and scope of such a study.

As far as the second part of the recommendation is concerned, that is, a more penetrating analysis of the data now available, we are able to report some progress on the preparation of revised long-term series and the Economics Branch, C.D.A., is co-operating with the Agriculture Division, D.B.S. in the preparation of a revised handbook. This is, of course, a necessary first step in further analytical work.

A SYNOPSIS OF THE DAIRY ENTERPRISE ON 81 SELECTED FARMS IN THE NORTH OKANAGAN VALLEY, BRITISH COLUMBIA, 1960-61

B. K. Acton

A bird's-eye view of the operations of 81 dairy farms in the Okanagan valley of British Columbia, in 1960, will point to the major variations in investment, organization, expenses and receipts between all 81 farms, and the 27 most successful farms in the group. For our observations we shall use data collected as part of a broader economic survey of farming in the area.

Size of Farm and Land Use.—The high income farms were generally larger than the others; they had 214 acres, on the average, and 105 of these acres were in improved land. The corresponding averages, for all 81 dairy farms, were 161 and 80 acres respectively. Part of the land was irrigated on 29 farms.

About 25 per cent of the cultivated acreage was used for grain production, 45 per cent for hay crops, and 25 per cent for improved pasture. In the crop year under review, grain yielded slightly less than one ton per acre and hay crops averaged about 2.5 tons an acre.

Livestock.—The high income farms had an average of 43.3 cattle animal units per farm and milked an average of 24 cows per farm. The corresponding averages for all 81 farms were 32.7 and 18 respectively. Seventy farms, including 26 of the 27 high income farms, had their cows artificially inseminated.

Feed consumption averaged about 3.7 tons per animal unit. High income operators fed slightly more grain and a little less hay per animal unit than did all 81 farmers as a group. Production, on the farm, accounted for about 80 per cent of the grain and 90 per cent of the hay fed.

Milk Production.—High income farms sold 8,507 pounds of milk per cow, on the average, at a cost of $3.18 per 100 pounds. The average cost, for all 81 farms, was $4.04 per 100 pounds, and sales of milk, also for these 81 farms, averaged 7,915 pounds per cow.

Capital.—Capital investment, for the 81 farms, averaged $41,400 per farm, or $2,301 per milking cow. It averaged $51,682 per farm, or $10,282 more for high income farms than for all farms grouped together, owing chiefly to the larger acreage of the higher income farms. Average investment per milking cow, however, averaged $2,301 for all farms and exceeded the average for high income farms by $146.

The proportional distribution of capital among its major components was about the same for the total number of farms and for the subgroup.

The average value of owned land was $217 per acre of improved land and $37 per acre of unimproved land, for the group as a whole, and $212 and $33 respectively for the subgroup.

The average distribution of capital among its major components was about the same for the total number of farms and for the subgroup. Average investment per farm, in land and buildings, represented 68 per cent of total investment, for all farms, and 65 per cent for the 27 high income farms. Average investment in livestock and in equipment represented 16 and 18 per cent of the total, respectively, in high income farms and 14 and 17 per cent for the whole group.

Receipts and Expenses.—Total farm receipts averaged $10,275 per farm and $571 per milking cow, for all farms, and $15,128 and $631 respectively for the subgroup of the 27 high income farms (Table 3).

Table 1.—Average Capital Investment on Selected Dairy Farms, North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms		All dairy farms	
	Per farm	Per cow	Per farm	Per cow
Number of farms	27		81	
	—dollars—			
Land	22,979	958	18,466	1,026
Buildings	10,803	450	9,586	533
Total real estate	33,782	1,408	28,052	1,559
Livestock	8,116	338	6,048	336
Equipment	9,291	388	6,965	387
Crops, feed, seed, etc	493	21	335	19
Total farm capital	51,682	2,155	41,400	2,301

Table 2.—Average Current Receipts and Expenses on Selected Dairy Farms, North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms		All dairy farms	
	Per farm	Per cow	Per farm	Per cow
Number of farms	27		81	
	—dollars—			
CURRENT RECEIPTS				
Crop sales	464	19	301	17
Livestock sales	1,092	46	920	51
Milk and cream	8,319	347	5,676	315
Eggs	164	7	100	6
Custom work	83	3	55	3
Other miscellaneous	371	15	163	9
Total current receipts	10,493	437	7,215	401
CURRENT EXPENSES				
Crop expenses	401	17	288	16
Feed purchases	1,563	65	1,357	75
Livestock purchases	480	20	382	21
Other livestock purchases	372	16	246	14
Equipment expenses	1,202	50	963	54
Building and other repairs	106	4	93	5
Labor hired	740	31	487	27
Custom work	164	7	126	7
Real estate levies	437	18	374	21
Miscellaneous current expenses	116	5	102	6
Total current expenses	5,581	233	4,418	246

Table 3.—Average Operating Statement of Dairy Farms, North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms		All dairy farms	
	Per farm	Per cow	Per farm	Per cow
Number of farms	27		81	
	—dollars—			
FARM RECEIPTS				
Current receipts	10,493	437	7,215	401
Capital receipts	542	23	308	17
Net inventory increase	4,093	171	2,752	153
Total farm receipts	15,128	631	10,275	571
FARM EXPENSES				
Current expenses	5,581	233	4,418	246
Capital expenses	4,383	183	3,109	173
Total farm expenses	9,964	416	7,527	419
FAMILY FARM INCOME	5,164	215	2,748	152
Less: Interest on investment at 5 per cent	2,584	107	2,070	115
Value unpaid family labor	619	26	596	33
OPERATOR'S LABOR INCOME	1,961	82	82	4
Plus: Value of perquisites	698	29	728	41
OPERATOR'S LABOR EARNINGS	2,659	111	810	45
NON-FARM INCOME	269		625	

Table 4.—Average Acreage per Farm, Land Utilization and Yield per Acre on Dairy Farms, North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms			All dairy farms		
	Size of farm	Land use	Yield per acre	Size of farm	Land use	Yield per acre
Number of farms		27			81	
	acres	per cent	tons	acres	per cent	tons
IMPROVED LAND	105			80		
Grain		27	0.93		24	0.90
Hay		42	2.62		45	2.57
Pasture		26			24	
Summerfallow		2			2	
Farmstead and idle		3			5	
UNIMPROVED LAND	109			81		
Total	214			161		

Table 5.—Average Number of Animal Units and Cows Milked on Dairy Farms, North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms	All dairy farms
	Per farm	Per farm
Number of farms	27	81
	—animal units—	
Cattle	43.3	32.7
Horses	0.1	0.3
Sheep	0.4	0.2
Pigs	0.1	0.4
Poultry	0.8	0.6
Total animal units	44.7	34.2
	—number—	
Number of cows milked	24.0	18.0

Table 6.—Average of Feed Consumed per Animal Unit on Dairy Farms, North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms		All dairy farms	
	Per animal unit	Amount home produced	Per animal unit	Amount home produced
Number of farms	27		81	
	tons	per cent	tons	per cent
GRAIN				
Home produced	0.51	80	0.45	79
Purchased	0.13		0.12	
Total	0.64		0.57	
HAY				
Home produced	2.82	93	2.79	89
Purchased	0.22		0.34	
Total	3.04		3.13	

Table 7.—Average Milk Production per Cow, Dairy Farms, North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms	All dairy farms
Number of farms	25	78
	—pounds—	
Milk sold	8,507	7,915
Milk used on farm	331	342
Total production per cow	8,838	8,257

Table 8.—Average Price per One Hundred Pounds of Milk and Cost of Production per One Hundred Pounds of Milk on Dairy Farms North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms	All dairy farms
Number of farms	24	64
	—dollars—	
Price received per one hundred pounds of milk	4.19	4.17
Cost of producing one hundred pounds of milk	3.18	4.04

Table 9.—Average Number of Productive Man Work Units, Man Equivalents and Productive Man Work Units per Man Equivalent on Dairy Farms North Okanagan Valley, B.C., Year Ending March 31, 1961

	High income farms	All dairy farms
Number of farms	27	81
	—number—	
Productive man work units	509	395
Man equivalents	1.64	1.51
Productive man work units per man equivalent	310	261

Total farm expenses averaged $7,527 per farm and $419 per milking cow, for all farms, and $9,964 per farm and $416 per milking cow for the subgroup (Table 3). Feed purchases and equipment expenses were by far the largest items of expenditure; they accounted for 28.0 per cent and 21.5 per cent, respectively, of all current expenditures on high income farms, and 30.7 and 21.8 per cent for all 81 farms (Table 2).

Operator's labor income was much higher, on the average, for the high income farms ($1,961), than for the 81 farms as a whole ($82). The higher average for the subgroup is attributable not only to its much higher surplus of current and capital receipts over current and capital expenses but also to its much higher net inventory increase (Table 3).

DOMESTIC DEMAND FOR FARM PRODUCTS

L. E. Drayton

Almost two thirds of Canada's agricultural output is utilized domestically. The great bulk of this two-thirds is used either as food or in the production of food, Non-food products such as flaxseed, wool, and woodlot products are of smaller importance in Canadian agriculture.

The total demand for food in Canada has grown rapidly since 1935. Estimated personal expenditure on food rose from $819 million in 1935 to $6,280 million in 1963[1]. Much of this increase is attributable to changes in price levels. On a constant dollar basis, national expenditure on food was not quite three times as high in 1963 as in 1935.

Growth in total food expenditure was somewhat larger than growth in expenditure for domestically produced food. We have no official estimates of the latter type of expenditure but we know that imports of foods of types and kinds grown in Canada have increased from five per cent of domestic disappearance in 1935-39 to eight per cent in 1958-62. Meanwhile, per capita consumption of citrus fruits and coffee, which are among the main classes of food of kinds not produced in Canada, has increased sharply.

The main forces leading to this growth in aggregate expenditure on food have been increasing population and increasing per capita income. Population growth has the obvious effect of increasing food requirements at any given level of individual consumption. Income growth tends to modify the consumption pattern and cause gradual but lasting shifts in eating habits. These shifts are generally in the direction of substituting expensive or luxury for cheap or staple foods. The former category of foods includes meats and many fruits and vegetables. The latter category includes cereals, potatoes and pulses. Year-to-year price variations among food products induce short-term fluctuations around the trend line for specific foods. Growth in demand for goods other than food and for services has, to some extent, moderated the increase in aggregate demand for food.

Population.—In the 30 years from 1901 to 1931 Canada's population almost doubled. During the next 30 years the rate of growth was not quite as great, the net gain being 76 per cent. Examining the data more closely we find that annual population increases have ranged from a peak of 3.3 per cent of the preceding year's population in 1957 to a low of 0.9 per cent in 1937 (Table 1). Assuming constant per capita food consumption, this population growth would lead to a corresponding increase in the aggregate demand for food.

Population growth has been associated with a shift of concentration of population from rural areas, especially farms, to large cities. Farm population in Canada actually declined 35 per cent from 1931 to 1961; a large part of this decline occurred after 1949. As the farm population finds it much more convenient to produce a large portion of its own food requirements than does the urban population, the shift from farm to city has led to a growing proportion of food supplies finding its way through commercial marketing channels and thus increased aggregate expenditure on food.

Income.—By 1963 per capita disposable income in Canada had increased to 525 per cent of its amount in 1935. Increases took place every year except 1954 and in several years the annual increase exceeded 10 per cent (Table 1). Some of this growth was simply a reflection of the increase in the general price level but, even on a constant dollar basis, there has been an increase in all but six years, three of which were in the immediate potswar period.

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[1] National Accounts, Income and Expenditure, 1926-1956 and 1963, Dominion Bureau of Statistics, Table 47.

Table 1.—Growth of Canadian Population and Per Capita Disposable Income, 1935-63

Year	Population		Per Capita Disposable Income			
			In current dollars		In constant dollars	
	Total	Increase from preceding year	Amount	Increase from preceding year	Amount	Increase from preceding year
	—000—	—per cent—	—dollars—	—per cent—	—dollars—	—per cent—
1935	10,845	—	301	—	521	—
1936	10,950	1.0	315	4.6	536	2.9
1937	11,045	0.9	353	12.1	583	8.8
1938	11,152	1.0	354	0.3	576	−1.2
1939	11,267	1.0	371	4.8	606	5.2
1940	11,381	1.0	420	13.2	658	8.6
1941	11,507	1.1	483	15.0	707	7.4
1942	11,654	1.3	592	22.6	828	17.1
1943	11,795	1.2	623	5.2	848	2.4
1944	11,946	1.3	672	7.9	904	6.6
1945	12,072	1.0	688	2.4	915	1.2
1946	12,292	1.6	726	5.5	933	2.0
1947	12,551	2.1	764	5.2	896	−4.0
1948	12,823	2.2	864	11.8	895	−0.1
1949	13,447	4.9	881	2.0	881	−4.7
1950	13,712	2.0	925	5.0	895	1.6
1951	14,009	2.2	1,056	14.2	927	3.6
1952	14,459	3.2	1,112	5.3	950	2.5
1953	14,845	2.7	1,139	2.4	974	2.5
1954	15,287	3.0	1,111	−2.5	938	−3.7
1955	15,698	2.7	1,162	4.6	980	4.5
1956	16,081	2.4	1,253	7.8	1,038	5.9
1957	16,610	3.3	1,281	2.2	1,026	−1.2
1958	17,080	2.8	1,340	4.6	1,046	1.9
1959	17,483	2.4	1,370	2.2	1,055	0.9
1960	17,870	2.2	1,403	2.4	1,068	1.2
1961	18,238	2.0	1,424	1.5	1,076	0.7
1962	18,570	1.8	1,513	6.2	1,125	4.6
1963	18,896	1.8	1,580	4.4	1,163	3.4

Source:—National Accounts, Income and Expenditure, D.B.S.

This growth in income has enabled Canadians to eat more expensive foods without increasing the proportion of their income which they spend on food. In fact, the latter has gradually declined from 24 per cent in 1949 to 21 per cent in 1963.

Generally speaking, high income people eat what they like while low income people eat what they can afford. Thus, to be effective in increasing food consumption, income increases have to reach the lower and middle income population sectors. The income increase in Canada since 1935 has done this, to a considerable extent. Wage and salary levels have followed a steady upward trend and there is now much less unemployment than during the 1930's. Moreover, with increased employment of married women the proportion of families with two or more income earners has steadily increased. Repeated increases in the size of the old age pensions have tended to maintain or even increase the relative purchasing power of the elderly sector of the population. Family allowances have eased somewhat the problems of large families in maintaining an adequate diet. Unemployment insurance has cushioned the effect of unemployment on consumer purchasing power. Thus, a considerable proportion of the lower income sectors of society have shared the growth in income.

Demand for Other Goods and Services.—With rising levels of income and living a myriad of goods which in the 1930's were luxuries, or not even produced, have become regarded as necessities for an increasing sector of our population. To obtain these goods, Canadians have reduced the share of their income that they spend on food. The proportion of disposable income which was spent on food declined from 25 per cent in 1935 to 21 per cent in 1963. Nevertheless, the amount spent on food, per person, on a constant dollar basis, had increased substantially.

In addition, Canadians now buy more services with food, as is well illustrated by the growing demand for meals in restaurants. The proportion of the food dollar spent by typical urban families in major cities for food away from home increased from 9.9 per cent in 1953 to 11.8 per cent in 1962[1]. There is a growing variety of processed, semi-prepared and prepared foods on the market.

Quantity of Food Consumed.—Even though expenditure on food, per person, has increased sharply with rising income total quantity of food consumed per person has changed little. For the food items listed in Table 2, which include all items for which data are available except beverages and starches, per capita consumption was 1,401 pounds in 1935-39 and 1,439 pounds in 1958-62. As foods vary a great deal in their water content, calories intake is a better measure of food consumption. Canadian calorie intake per person increased about eight per cent during World War II but has since declined below its prewar level[2]. This decline, which is slight, has probably been due to a decline in average physical activity leading to a reduction in food needs.

Variety of Food Consumed.—Comparison of consumption rates for specific foods in Canada for 1935-39 and 1958-62 show that increases in income tend to lead to changes in the diet (Table 2). As already noted, these changes are generally in the direction of substituting expensive for cheap foods. Fruits, certain vegetables and meats tend to be high cost sources of nutrients and their consumption increases with rising income. Cereals, potatoes and pulses normally provide the lowest cost sources of calories and proteins and their consumption usually declines with rising income. Most other foods tend to be intermediate in cost and, consequently, their consumption responds less to income changes.

Consumption of tomatoes and fruit apparently increased 90 pounds, or 61 per cent, per person between the prewar and the recent period. Consumption of vegetables increases 40 per cent on a per capita basis. In both instances, the statistics are not fully comparable as coverage has been improved in recent years. Nevertheless, the true gains in per capita consumption are undoubtedly large. Much of these gains have been concentrated among imported products such as citrus fruit and out-of-season fresh vegetables.

Consumption of meat per person has increased by about 20 per cent since the prewar period. This increase has been equally divided between pork and beef with increases in each of these major meats of about 13 pounds per person. As pork consumption was somewhat lower than beef consumption in the 1935-39 period, this represents a more rapid proportionate growth in pork than in beef consumption. However, all the increase in per capita pork consumption took place before 1949 while beef consumption has continued to increase. There has been a marked change in the relative prices of the two meats. Up to 1944, the price of beef steak was usually much lower than that of pork loin chops. Since 1950, the reverse has been true.

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[1] Urban Family Food Expenditure, 1953 and D.B.S. Daily Bulletin, April 16, 1964, Dominion Bureau of Statistics. The samples used for the two studies concerned are very similar in nature and of sufficient size that the likelihood of this difference arising from chance error in sampling is very small.

[2] Current official estimates are 3,064 calories per person per day in 1935-39 and 3,033 in 1960 (Sources: Canadian Food and Nutrition Statistics 1935-60 and Canadian Nutrition Notes, March 1964. Both published by Nutrition Division, Department of National Health and Welfare).

Table 2.—The Domestic Disappearance per Person of the Principal Classes and Items of Food in Canada in 1935-39 and 1958-62[a]

	1935-39 average	1958-62 average
	—pounds[b] per person per year—	
Cereals		
Flour	180.8	136.1
Oatmeal and rolled oats	7.6	4.9
Rice	4.6	4.0
Breakfast foods	7.4	6.7
Other	3.6	1.8
Total cereals	204.0	153.5
Sugar and Syrups		
Sugar[c]	92.8	98.2
Other sugar content	9.2	7.7
Total sugars and syrups, sugar content[d]	102.0	105.9
Pulses and nuts		
Beans, dried[e]	4.4	2.8
Peas, dried	5.5	1.2
Nuts, shelled	3.3	4.3
Cocoa, green beans	1.8	1.4
Total pulses and nuts	15.0	9.7
Oil and fats		
Butter	31.8	17.0
Lard	3.9	6.3[f]
Shortening	10.5	9.4
Margarine	—	9.0
Other oils and fats	1.8	4.0
Total oils and fats, fat content	41.8	42.3[f]
Fruit		
Tomatoes, fresh	15.4	17.7
Tomato products, net weight	11.0	20.1[g]
Citrus		
Fresh	26.0	30.8
canned, net weight	0.2	16.4
Other		
fresh	45.9	66.5
canned net weight	6.5	16.3
dried, processed weight	8.3	5.3
juice	—	5.6
frozen	0.1	2.4
All fruit, fresh equivalent	147.0	237.1[g]
Vegetables		
Fresh	67.6	77.0[h]
Cabbage and greens	16.2	19.6
Carrots	15.4	15.9
Legumes	6.2	2.1
Other	29.8	39.3[h]
Canned, net weight	11.4	17.7[h]
Frozen	—	2.8
All vegetables other than potatoes, fresh equivalent	79.0	110.6[h]
Potatoes, white, fresh equivalent	200.4	154.1
Meat		
Pork, carcass weight	39.9	53.0
Beef, carcass weight	54.7	67.5
Veal, carcass weight	10.5	7.4
Mutton and lamb, carcass weight	5.6	3.3
Canned, net weight	1.4	4.9
Total meat, carcass weight	118.0	140.8
Eggs, fresh equivalent[i]	32.5	35.5
Poultry and fish		
Hens and chickens, eviscerated weight[i]	12.3	22.0
Other poultry, eviscerated weight[i]	2.3	7.6
Fish and shellfish, fresh, frozen, cured, edible weight	9.2	9.4
Canned, edible weight	3.7	3.5
Total poultry and fish, edible weight[i]	22.4	34.6

Table 2.—The Domestic Disappearance per Person of the Principal Classes and Items of Food in Canada in 1935-39 and 1958-62[a] (continued)

	1935-39 average	1958-62 average
	—pounds[b] per person per year—	
Milk and cheese		
Cheese	4.0	8.5
Whole milk		
evaporated	6.1	17.1
fluid[j]	416.3	346.0
Milk in ice cream	10.9	35.8
Skim milk powder[k]	1.5	7.1

[a] Source:—Agriculture Division, Dominion Bureau of Statistics.
[b] Retail weight except where otherwise stated.
[c] Refined weight.
[d] Imports of molasses for human consumption not available before 1955.
[e] Including soybean flour from 1949.
[f] Official figure for lard is 8.2 pounds but this includes 1.9 pounds used in production of margarine and shortening.
[g] Includes tomato, catsup and some other tomato products not included in 1935-39 data. These products have a fresh equivalent of about 15 pounds a year.
[h] Includes certain vegetables for which data were not obtained in 1935-39.
[i] Newfoundland excluded.
[j] Including cream as milk. (Newfoundland excluded).
[k] Some fed to animals.

In the period since 1949, there has been a definite upward trend in the demand for beef. Consumption per person has increased about 30 per cent, even though beef prices have risen more rapidly than the consumer price index (Figure 1). On the other hand, there has been a downward trend in the demand for pork. Pork consumption per person has exceeded the 1949 level only in 1951, 1962 and 1959, even though the increase in pork prices has been consistently less than that in the consumer food price index (Figure 2)[1].

One of the most phenomenal increases in food consumption in Canada since 1935-39 has been that in poultry meat. Per capita consumption of poultry meat per person including hens, chickens, turkeys, ducks and geese has doubled. This increase stems chiefly from a technological revolution in production.

Most of the increase in poultry meat consumption per person has taken place since 1949. At that time, the principal poultry meats on the market were roasting chickens, fowl and heavy turkeys. Chicken broilers were a speciality available for the most part in the summer months and few, if any, turkey broilers were sold. Now chicken and turkey broilers dominate the poultry meat market and roasting chickens are sold in very limited volume. The chicken price index has fallen to three-quarters of its 1949 level at a time when food prices, in general, and beef prices, in particular, have followed a strong upward trend (Figure 3). Thus, much of the growth in poultry meat consumption has been a response to a changing relative price situation although increased income has, no doubt, been an important contributor.

Our per capita consumption of eggs is about 10 per cent higher now than in 1935-39. Currently, there is a declining per capita demand for eggs (Figure 4). A postwar upward trend in egg consumption per person reversed itself in 1957 and per capita consumption since has either declined or changed little each year, despite price fluctuations close to the 1957 price level, and prices which in relation to changes in prices of other foods might have been expected to induce consumption increases.

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[1] A further analysis of the change in relative demand for these two meats is provided in an article Red Meat Consumption in Canada, by L. E. Drayton, in The Economic Annalist, October 1959, pp. 101-108.

TREND IN DEMAND FOR BEEF 1949 - 1963

1949 = 100

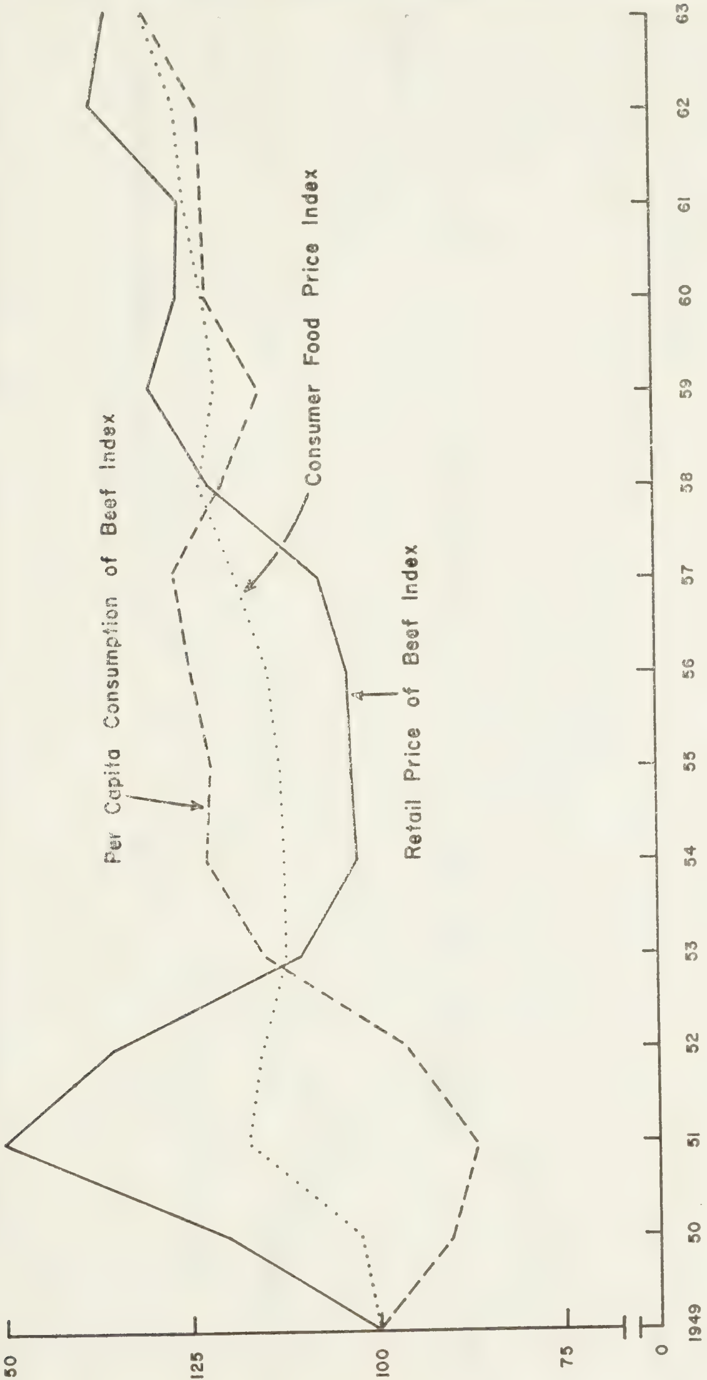

Figure I

TREND IN DEMAND FOR PORK 1949 - 1963

1949 = 100

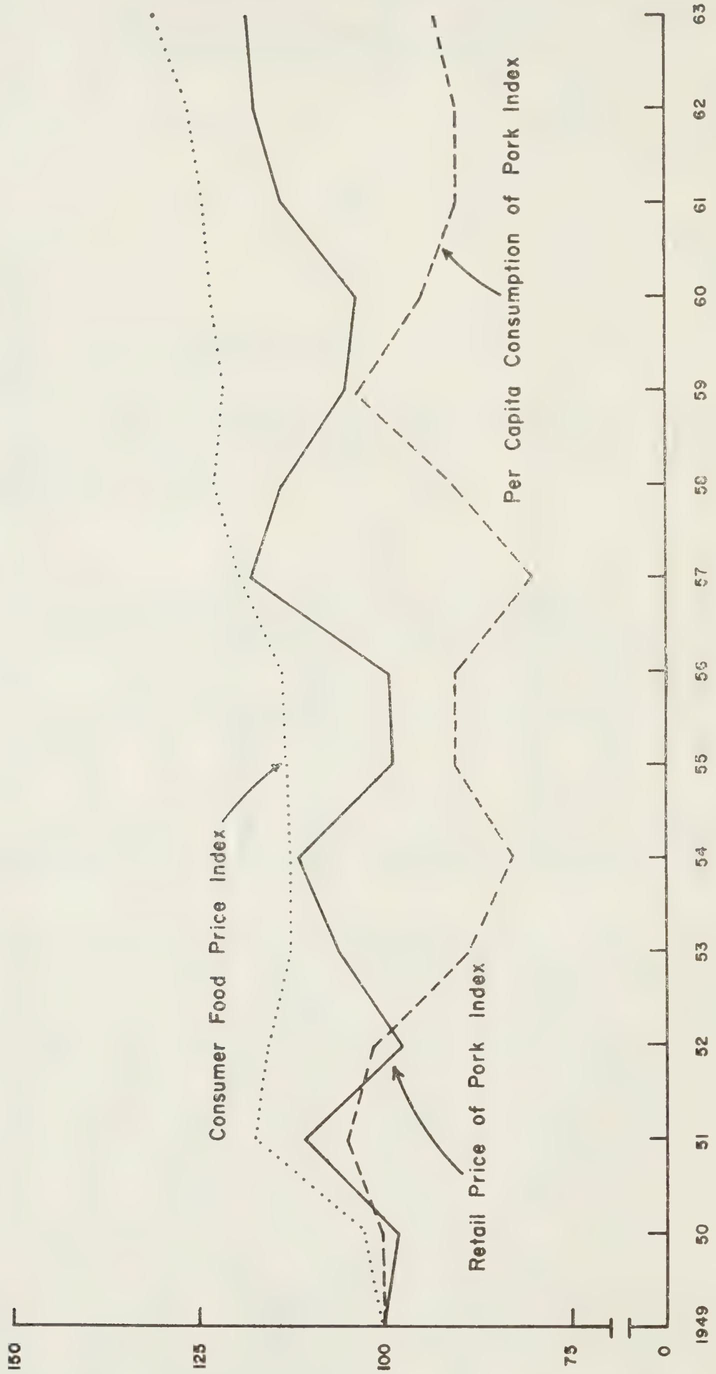

Figure II

TREND IN DEMAND FOR CHICKEN 1949 - 1963

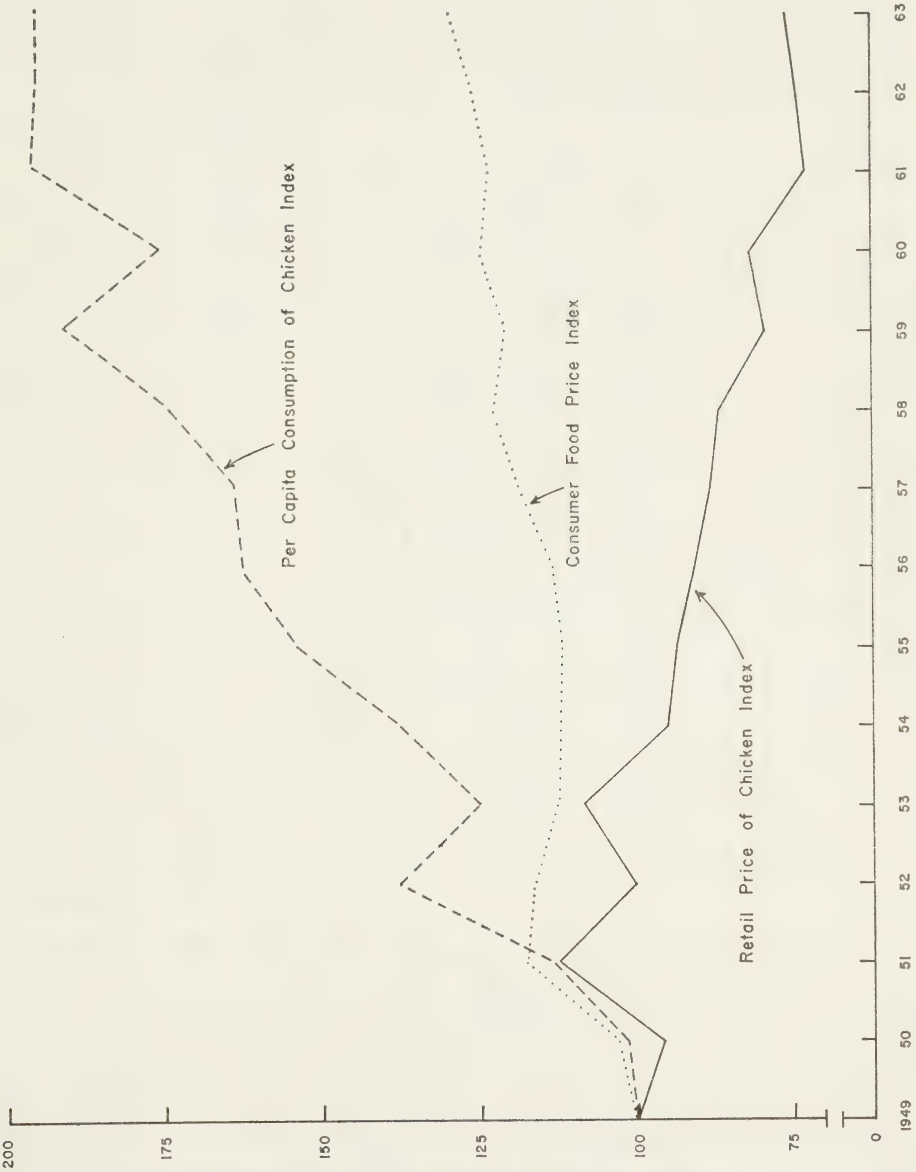

Figure III

TREND IN DEMAND FOR EGGS 1949 - 1963

1949 = 100

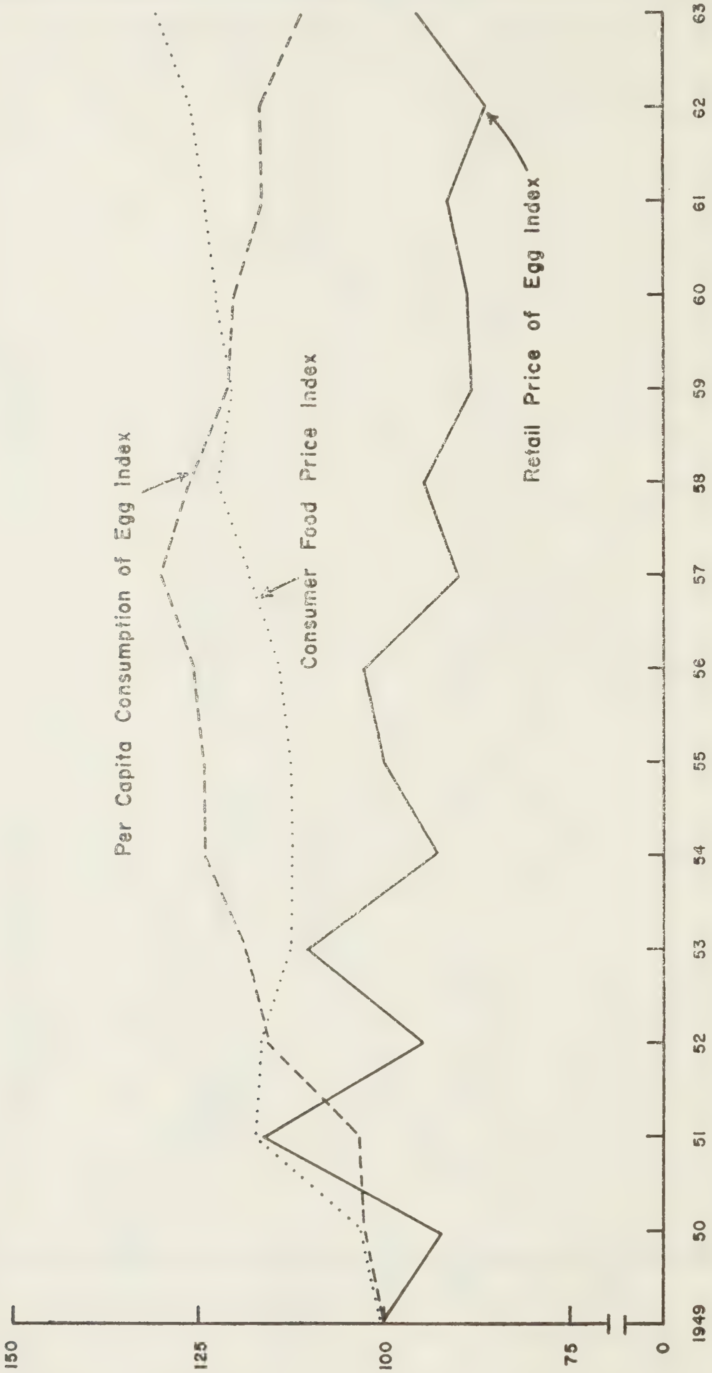

Figure IV

Consumption, per person, of sugar and fats and oils in total has changed very little since 1935-39. These are normally moderate-cost sources of calories. However, within the fats and oils category, there has been a spectacular change. Butter, the most expensive fat, has been replaced, to considerable extent, by cheaper fats, particularly margarine. This is not a response to changing levels of income but an adjustment to introduction of margarine on the Canadian market in 1949. This adjustment may not be complete yet, as many people are slow to accept new food products. Per capita consumption of butter now responds fairly sharply to price changes, as evidenced by the increase following the 1962 price reduction.

The increase in lard consumption may be due to the growing popularity of commercially baked foods. Commercial bakeries are likely to use the cheapest fat which will yield satisfactory quality in the baked product.

The picture for dairy products, other than butter, is mixed. For cheese, evaporated milk, ice cream and skim milk powder there have been marked upward trends; the consumption rates per person more than doubled. Fluid milk consumption per person followed an upward trend until 1945 and has since declined precipitously. Causes of this latter decline have not been determined but are probably factors other than changing price and income levels. Data from the 1957 Urban Family Food Expenditure study indicated that income does not affect the rate of individual family milk consumption[1]. This finding implies that the rising income rates of recent years should have had little, if any, effect on milk consumption. Milk prices have risen slightly more rapidly than the consumer price index since 1949 but the difference is too small to have a great effect on consumption. Substitution of powdered skim milk for fluid milk in various uses and scare of cholesterol may have been factors contributing to the decline in fluid milk consumption.

The remaining food categories in Table 2, cereals, potatoes and pulses, are low cost sources of calories and protein. They have all followed marked downward trends in per capita consumption since 1935-39, the declines being 25 per cent for cereals, 23 per cent for potatoes and 60 per cent for pulses. As wheat exports are much larger than Canadian disappearance, trends in wheat consumption in other countries are of importance to Canadians. Total cereal grain consumption per person is declining in most European countries. However, in the rye eating countries of Northern Europe there is a trend toward the substitution of wheat for rye and coarse grains, and some increase in per capita consumption of wheat. Wheat consumption is increasing in many of the developing countries but these countries depend on donations or subsidies to import wheat.

Demand for Feed Production.—Even though cattle and poultry production, in Canada, has increased greatly since 1935-39 total livestock numbers, as measured in grain consuming animal units, is up only four per cent. A decline in the number of dairy cows and horses offset nearly all the increase of other types of livestock. As a result, the number of grain consuming animal units, per capita, on Canadian farms, has declined from 1.09 in 1949-50 to 0.82 in 1962-63, with an almost continuous downward trend (Table 3). Meanwhile, there has been little trend in the amount of grain fed per grain consuming animal unit. The estimated quantity fluctuated between a low 0.64 and a high of 0.93 tons per animal unit. This apparent fluctuation may, to some extent, be due to lack of accuracy in the estimates of feed grain consumption. As much grain is fed on the farm where it is produced, the estimates of feed grain supplies may be subject to considerable error.

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[1] Johnston, Charlotte I., Urban Family Expenditures for Certain Milk Products 1957, Economics Division, 1963. The correlation between income and individual family milk consumption was not statistically significant. Also, when families of the same composition were grouped by income, no consistent relation was indicated between income and milk consumption.

The quantity of grain used for seed is very closely correlated with the acreage planted, and there has been a gradual increase in the acreage of cereal crops. The proportion of these crops, which consists of registered or certified seed, may vary considerably from year to year. Both the supply of and the demand for forage crop seeds appear to be quite variable from year to year. The continuing expansion of acreage in forage crops should result in an upward trend in demand for at least some types of these seeds.

Industrial Use of Grains.—The main industrial usage of grains in Canada, especially barley, is for the production of alcoholic beverages. The volume of barley entering industrial use exceeds that of all other grains together (Table 4). Since 1949-50, its industrial usage in Canada has grown at about the same rate as population, with utilization on a per capita basis being fairly consistently near 0.8 bushels.

Table 3.—Trend in Feed Grain Consumption and Grain-Consuming Animal Units in Relation to Livestock and Human Population 1949-50 to 1962-63[a]

Year	Feed grains consumed	Grain-consuming animal units	Grain consumed per animal unit	Grain-consuming animal units per person
	—tons—	—number—	—tons—	—number—
1949-50	9,420,000	14,830,000	0.64	1.09
1950-51	10,414,000	14,016,000	0.74	1.01
1951-52	13,525,000	14,595,000	0.93	1.02
1952-53	12,050,000	14,495,000	0.83	0.99
1953-54	12,056,000	13,646,000	0.88	0.90
1954-55	12,042,000	14,428,000	0.83	0.93
1955-56	13,257,000	14,745,000	0.90	0.93
1956-57	12,818,000	15,026,000	0.85	0.92
1957-58	12,711,000	15,319,000	0.83	0.91
1958-59	13,170,000	16,210,000	0.81	0.94
1959-60	12,887,000	16,718,000	0.77	0.94
1960-61	13,284,000	15,322,000	0.87	0.85
1961-62	11,067,000	16,004,000	0.69	0.87
1962-63	12,725,000	15,480,000	0.82	0.82

[a]Source:—Quarterly Bulletin of Agricultural Statistics, D.B.S., October-December 1963.

Table 4.—Utilization of Grains for Industrial Purposes in Canada, 1949-50 to 1961-62

Year	Wheat	Barley	Rye	Flaxseed	Corn
			—bushels—		
1949-50	46,846	11,412,429	599,068	4,656,968	1,299,946
50	283,540	11,106,390	621,292	3,618,497	1,062,125
51	360,271	12,464,987	459,654	3,638,658	1,588,036
52	181,055	13,176,902	562,310	4,470,203	1,906,464
53	32,082	12,662,631	827,459	3,806,508	2,377,625
1954-55	447,559	12,569,470	731,873	3,358,572	1,781,053
55	1,656,322	12,450,060	985,933	3,606,718	1,944,482
56	1,430,506	13,951,553	1,026,781	3,622,094	2,794,536
57	1,401,705	14,187,790	1,252,400	3,617,201	2,132,161
58	1,339,942	12,827,324	1,074,312	3,301,339	2,060,089
1959-60	1,485,538	13,973,827	1,379,453	2,606,670	2,154,964
60	1,468,086	14,608,876	1,229,514	2,916,230	2,752,928
61-62	1,500,000	14,107,501	1,219,695	2,464,829	2,238,857

Source:—Agriculture Division, Dominion Bureau of Statistics.

The industrial usage of flax seed is different from that of other grains in that it is largely for the production of oil for the paint industry. With the development of new types of paints, which do not depend on linseed oil, there has been a sharp decline in per capita usage of flax seed for industrial purposes. This decline has been such that even the aggregate disappearance is much lower in recent years than around 1949-50.

Tobacco.—The demand for tobacco has been characterized by an extremely rapid growth in the smoking of cigarettes. On a per capita basis, Canadians now smoke about seven times as many cigarettes as they did 40 years ago (Table 5). This growth has been fairly continuous, except for some interruption in the 1930-35 and 1945-50 periods. Since 1950, the growth has been partially offset by a decline, per person, in the use of tobacco in other forms, especially plugs. Cigar consumption, per person, declined from 1920 to 1935 and then increased again. With a trend toward the sale of small cigars, the figures probably overstate the increase in the amount of tobacco used in cigars and this may still be below the 1945 level, on a per capita basis.

Table 5.—Apparent Per Capita Consumption of Tobacco Products in Canada, Selected Years, 1920-1962

Year	Cigarettes	Cigars	Tobacco cut	Tobacco plug	Snuff	Raw leaf
	—number—		—pounds—			
1920	285	31.6	[a]	[a]	0.08	[a]
1925	304	19.0	1.32	0.92	0.09	[a]
1930	493	18.0	1.52	0.58	0.10	[a]
1935	485	11.5	1.67	0.36	0.07	[a]
1940	663	14.5	2.23	0.27	0.07	[a]
1945	1,255	18.2	2.20	0.28	0.09	0.21
1950	1,252	14.5	1.89	0.17	0.07	0.10
1955	1,566	16.1	1.50	0.10	0.05	0.07
1960	1,925	18.6	1.23	0.06	0.05	0.05
1961	2,012	18.5	1.21	0.06	0.04	0.05
1962	2,083	18.9	1.21	0.06	0.05	0.04

[a] Not available.

SOURCE:—Dominion Bureau of Statistics and Economics Branch.

Miscellaneous Non-Food Products.—From 1950 to 1954, aggregate apparent domestic disappearance of raw wool in Canada dropped from 86 million pounds to 46 million pounds. Since 1954, there has been some recovery in raw wool consumption, on an aggregate basis, but this is almost entirely attributable to population growth, as the per capita rate of consumption continues to be about three pounds. Domestic production supplies only 10 to 15 per cent of our raw wool consumption.

Because of the variety of qualities and types of fur pelts, it is difficult to measure production or consumption on any basis other than value. However, since 1939, the number of fur farms has halved and the number of animals on such farms has doubled. The increase in number of pelts produced does not appear to have been quite as rapid as the increase in the number of fur bearing animals raised. Nevertheless, the value of pelts marketed has more than doubled from 1949-62.

Summary.—Demand for agricultural products in Canada has been increasing as a result of population growth and of increases in per capita income. The population of Canada increased 76 per cent from 1931 to 1961, increasing the demand for food to a corresponding extent. Disposable income per person more than doubled, on a constant dollar basis, between 1935 and 1963.

These changes have been associated with sharp increases in the consumption per person of fruits, vegetables, meats and poultry meats. At the same time per capita consumption of cereals, potatoes, pulses and milk has been declining. Margarine was introduced to the Canadian diet in 1949 and has replaced butter to a considerable degree.

The increase in meat supplies from 1935 to 1963 was achieved with only a slight increase in grain consuming animal units on farms. Consequently, there has been little growth in domestic demand for feed grains in Canada. The main reason for this is the reduction in numbers of horses and dairy cows.

PUBLICATIONS OF THE ECONOMICS BRANCH

A Study of the Marketing of Fresh Fruits and Vegetables in Metropolitan Toronto. A joint study by the Economics Branch and the Farm Economics and Statistics Branch of the Ontario Department of Agriculture. Rayner, L. C. and S. E. Kidd of the Economics Branch and H. Weip of the F.E. and S. Branch of the Ontario Dept. Ottawa. 1964. pp. 34 incl. charts, a map, and photos.

The authors are chiefly concerned with the marketing organizations, the operation of the market, and the implications of changes in marketing conditions.

Credit Unions in Canada, 1963. pp. 18—and **Les caisses populaires au Canada, 1963.** pp. 18. Heighton, V. A. Ottawa. December 1964.

A twin, English and French, report on Credit Unions and Caisses populaires operations and growth in 1963.

Exports, Imports and Domestic Disappearance of Agricultural Products as a Percentage of Production, Canada, 1935 to 1962. Berthiaume, R. Economics Branch, C.D.A., in co-operation with Agriculture Division, Dominion Bureau of Statistics. Ottawa. February 1965. pp. 10 incl. 5 tables and 2 charts.

The seventh issue in a chronological series.

Directory of Farmers' Organizations and Marketing Boards in Canada, 1963. Ottawa. March 1965. pp. 30.

A bilingual—English and French—directory compiled by the Co-operatives Section. It includes farmers' organizations concerned with activities of farm people, generally, and provincial and federal agricultural marketing boards.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Food Aid and Other Forms of Utilization of Agricultural Surpluses. A review of programs, principles and consultations. FAO Commodity Policy Studies. No. 15. Rome. 1964. pp. ii + 55.

A paper "prepared by the Secretariat of the Food and Agriculture Organization, in consultation with the Secretariat of the UN/FAO World Food Program, as part of its contribution to the documentation for the UN Conference on Trade and Development."

Chapters I-IV review programs and policies for the utilization of agricultural surpluses since 1954. Chapter V discusses the outlook for and the supply aspects of food aid, the international trade aspects of surplus disposal, and the framework for or methods of administering food aid.

Synthetics and their Effects in Agricultural Trade. Commodity Bulletin Series No. 38 FAO. Rome. 1964. pp. vii + 59.

A description of developments in the synthetic rubber, man-made fiber, and synthetic detergent industries, and a review of the effects of these developments on the trade in natural rubber, cotton, wool, fats and oils, and hides and skins.

Economic Bulletin for Europe. Vol. 16, No. 1, September 1964. Economic Commission for Europe, Geneva, and U.N., New York, pp. 61 + 30—page statistical annex. Price: U.S. $1.00.

This issue of the Bulletin is concerned with "Recent changes in Europe's trade," which it reviews under the following chapter headings: Europe's place in world trade; Recent developments in western Europe's trade; The external trade of eastern European countries in 1963 and early 1964; Trade between eastern and western European countries; and International liquidity and balance-of-payments developments.

The following references to trade with Canada may be noted:

"While one-fourth of total Canadian exports go to western Europe (base metals, forestry products, and grain), only 15 per cent of that country's imports originate in western Europe (the United States being the obvious supplier of manufactures). The share of western Europe in total United States trade is about 29 per cent of exports and 27 per cent of imports. These shares hardly changed between 1961 to 1963, whereas western Europe's share in total exports from Japan and Canada fell slightly". (page 28)

"The share of Canada in total western European trade with North America is one-sixth, and if the United Kingdom is excluded, merely one-tenth. In fact, only the United Kingdom, among western European countries, trades extensively with Canada". (page 30)

"The sluggish development of western Europe's export trade with Canada in 1962 and 1963 was the product of the devaluation of early 1962 and probably also of the increased competitiveness of the United States. In both years the decline was largely concentrated on motor cars, particularly from the United Kingdom.

Canadian exports to western Europe, after falling in 1962, almost reattained their 1961 value in 1963. While the decline in 1962 was concentrated on wheat shipments to EEC countries, the recovery in 1963 was based on wheat and ore shipments to EFTA countries. The most impressive advance in Canada's exports in 1963 was, however, the upsurge in wheat shipments to the Soviet Union and other eastern European countries, $164 million, compared with only $30 million in 1962.

Western European exports to Canada seem to have recovered in the early months of 1964, and imports continued to grow fast, particularly of nonferrous metals and also of engineering goods, into the United Kingdom." (page 31).

Monthly Bulletin of Agricultural Economics and Statistics. FAO, Rome, Italy.

a) **Vol. 14, No. 1,** January 1965.

This issue contains an article, by Salen H. Khamis, on Statistics of Agricultural Prices. This article is an adaptation and a summary of a document prepared by Khamis in co-operation with Dr. S. Kawakatsu for the FAO Seminar on the Standardization of Cereal Statistics and Agricultural Price Statistics. The author describes the uses and characteristics of agricultural prices, the types of agricultural prices, and the compilation, processing and publication of price statistics. In this last part of his article he is chiefly concerned with compilation programs, sampling, averaging of prices for comparison purposes, and averaging for calculation purposes.

The Commodity Notes consist of quarterly notes on commodity markets and of notes (continued from the December issue of the Bulletin) on Instability and Stabilization of the World Market for Raw Jute. The quarterly notes deal with the weakening hides market, the revision of the Commonwealth Sugar Agreement, the extension of the United States Trade Development and Assistance Act, and cocoa forecasts and consultations.

b) **Vol. 14, No. 2,** February 1965.

Ladislas Lorinez, Director and U.N. Special Fund Project Manager, I.L.M.A., has an article on ILMA, The Latin American Agricultural Marketing Institute, which he describes in a sub-title as "a pioneering venture in agricultural marketing training and research".

The Commodity Notes include: *a*) Casein: Postwar Market Trends and *b*) Rice Development Plans: Targets and Achievements.

c) **Vol. 14, No. 3,** March 1965.

The first article, by K. R. Ellinger, deals with Polish Agriculture and the Dairy Industry, under the following headings: General characteristics of Polish agriculture, Milk production, Organization of the industry, UNICEF and FAO activities, Milk deliveries to plants, Farm marketing and farm manufacture, Milk utilization, Foreign trade in milk and milk products, and Outlook.

The Special Feature is an article by James P. O'Hagan on the International Stabilization of Olive Oil Markets.

The Commodity Note deals with The Common Grain Policy of the European Economic Community. It is a well-documented note discussing Preceding developments, The new price provisions, and Longer term implications.

Planning for Economic Development. Volume 11. Studies of National Planning Experience. Part 7—Private Enterprise and Mixed Economies. Department of Economic and Social Affairs, U.N. New York. 1965. pp. v + 237. Price: U.S. $3.00.

This document is a part of the second volume of the U.N. Secretary-General's report on planning for economic development. It contains studies of planning for economic development in Brazil, Columbia, France, India, Japan, the Netherlands, Pakistan, the United Arab Republic, and the United States of America.

Space Activities and Resources. Review of United Nations, International and National Programmes. New York. 1965. pp. v + 172. Price U.S. $2.00.

A review prepared at the request of the U.N. Committee on the Peaceful Uses of Outer Space.

Part I is a Review of the activities and resources of the United Nations, of its specialized agencies and of other competent international bodies relating to the peaceful uses of outer space. Part II is a Review of national and co-operative international space activities.

The agricultural economist will be particularly interested in references to climatology, agricultural meteorology, hydrometeorology, geophysics and the contributions of atmospheric sciences in such important fields as transport by land, sea and air, food production, public health, land use, water resource development, and communications.

Water Desalination: proposals for a costing procedure and related technical and economic considerations. Department of Economic and Social Affairs, U.N. New York. 1965. pp. vi + 56. Price: U.S. $0.75.

The last two paragraphs from the Preface give a succinct description of the contents of this report, and we quote:

> "As a result, this report is divided into two parts. Part I gives a breakdown of the principal cost items to be included under investment for desalination and proposes a simplified procedure to obtain an approximate but reasonably realistic cost for product water. Both single-purpose and combined (desalination and power) plants are considered in the presentation. Part II is a review of the technical and economic considerations encountered in the selection, construction and operation of desalination plants.

> "This study does not, however, go into problems of pricing and rate setting as such. Its purpose is to provide the tools with which the cost of desalinated water may reasonably be established for cost comparisons with possible alternative sources and, as appropriate, to serve as a basis for price and rate setting.

Yearbook of International Trade Statistics, 1963. Department of Economic and Social Affairs. New York. 1965. pp. 775. Price: $U.S. 11.50.

For the sake of brevity in describing the contents of this voluminous yearbook, we cannot do any better than quote the first paragraph, from the Introduction:

> "The fourteenth issue of the United Nations Yearbook of International Trade Statistics appears in one volume which contains detailed data for individual countries and basic summary tables to the trade of its region and of the world, analysing the flow of trade between countries and describing the fluctuations of the prices at which goods moved internationally. The summary tables are: world trade by regions and countries, world exports by provenance and destination, export and import quantum and prices indices and indices of terms of trade by regions, and indices by commodity classes. These tables are described in paragraph 10 of the General Statements. The General Statements also describe international standards for external trade statistics, and deviations from these standards are noted in the detailed tables."

OTHER PUBLICATIONS

An Economic and Physical Study of Cattle and Sheep Production in Devon and Cornwall in 1961-63, together with some comparative data for 1955-57. Brewer, J. L. and E. T. Davies. Department of Agricultural Economics, University of Exeter, 1 Courtenay Park, Newton Abbot, Devon, England. pp. 56. Price: 4/.

A study concerned with buying and selling policies and prices; output of meat, milk, and wool; financial results; the relative profitability of cattle and sheep, and the distribution of profit margins.

Working and Living Conditions in Canada. Prepared by the Economics and Research Branch, Department of Labour in consultation with the Department of Citizenship and Immigration and issued by the Department of Labour. Ottawa. 1964. pp. 93 incl. photos and tables; Available from the Queen's Printer and Controller of Stationery. Price: $0.35.

As its predecessors, this thirteenth edition of Working and Living Conditions in Canada is designed "to provide basic information for persons who are considering emigration to this country and—for those who have had no previous knowledge of life in Canada".

The topics under review are: Population and Employment; Finding a Job; Persons in Business for Themselves; Wages, Salaries and Earnings; Working Conditions; Education and Training; Living Standards; Social Security and Insurance Services; Government; and Immigrants and Immigration.

A Textbook of Economic Theory. Stonier, Alfred W. and Douglas C. Hague. John Wiley & Sons Inc. New York, U.S.A. Third Edition, 1964. pp x + 574.

Here is a book not only for the undergraduate student but also, and probably even more, for the harried and aging business or administrative economist, who wishes to get his ideas together on the theoretical aspects of modern economics.

Organized into three parts: *a*) Price Theory; *b*) Employment Theory, and *c*) The Theory of Growth, it really tackles modern views on economic theories only in the last two parts which, incidentally, have a very strong Keynesian flavor.

In part II, one finds a condensation of the current theoretical approaches to employment, consumption, investment, and the rate of interest as well as two chapters inspired by the authors' predilection for the economic genius of our modern era, and bearing the titles of Keynesian Employment Theory Summarized, and Keynes and the Classical Economics.

As too many theoretical economists, however, they find it difficult to shake off the burden of hypothetical omniscience, and to meld dynamic with static analysis. Still, they do not ignore that economics must be a science with flesh and blood on its skeleton, since it is so vitally and inherently concerned with the standards of living of people, as individuals and as groups. They must then be given some credit for Part III, which they use as a trailer to bring in their three short chapters on the theory of growth. These chapters, Some Basic Concepts, A Simple Growth Model, and Technical Progress and Capital Accumulation provide a good, but little more than a synopsis of the theory. Enough, though, to whet the appetite of the reader. He should want to open wider the window on the immense and continuously-widening field of well-documented literature in economic growth.

Farm Business Analysis. Guidelines for a Suggested Program in Farm Management. U.S. Department of Health, Education and Welfare. OE-81010, Circular No. 752. 1964. pp. v + 19. For sale by the Superintendent of Documents, U.S. Govt. Printing Office, Washington, D.C., 20402. Price: $0.20.

As stated in the Foreword, this publication is "designed for persons who have responsibilities for the administration and operation of vocational agricultural programs, is intended primarily as a guide to aid supervisors, teachers trainers, and teachers of vocational agriculture in planning and conducting more effective farm management programs. Emphasis is given to those practices and procedures considered essential in providing the type of instruction needed by present-day farmers."

A Primer on Money, Banking, and Gold. Bernstein, Peter L. Random House of Canada, Limited, Toronto. 1965. pp. x + 180. Price: $3.95.

The author, a New Yorker, is vice-president of Bernstein-Macaulay, a firm of investment counselors and financial advisers, and a teacher with the Economics Department of the New School for Social Research.

In this primer he answers several questions about the gold standard, the continuing depletion of U.S. gold stocks, relations between gold and money, the government's role in relation to the money supply, and deflation and inflation problems.

In his Introduction Bernstein says that these questions "are less difficult and complex than they appear. Furthermore, the informed citizen should, in any case, have a common-sense understanding of these matters. Indeed, most of his trouble in understanding them results from the knowledge that he *thinks* he has, because so much of it bears a superficial resemblance to his experience in handling his own affairs. But the thing is to have it right, to recognize and understand the difference between our own individual checking accounts and the great national accounts that influence the swing of economic events."

Farm Organization and Incomes in South West England, 1963-64. Morris, S. T., H. W. B. Luxton, G. D. O. Davies and W. J. Dunford, Department of Agricultural Economics, University of Exeter, 1 Courtenay Park, Newton Abbot, Devon, England. Report No. 153, March 1965. pp. 72. Price: Five shillings.

A report on the results of the 1963-64 Farm Management Survey and of "the changes that have occurred on stocking, cropping, production, costs and incomes over the two years 1962-63 and 1963-64", and a summary of results for an identical sample of farms for the 1954-55 to 1963-64 period.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS BRANCH

S. C. HUDSON, Director-General

JUNE-AUGUST 1965 **Vol. XXXV Nos. 3-4**

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G. P. BOUCHER, Editor

Published by Authority of the Honourable Harry W. Hays
Minister of Agriculture

INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935–39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	240.8	195.5	286.0	272.0	290.7	234.8	130.7	126.2	186.1
1963	244.6	236.3	197.2	275.4	268.4	298.6	237.4	133.0	130.3	196.2
1964	245.4	227.3	187.3	267.3	258.0	308.6	243.5	135.4	132.4	213.8
1964										
Jan.	246.5	231.1	198.0	264.2	264.1	301.1	242.1	134.2	131.4	210.3
Feb.	246.2	231.3	196.3	266.2	265.5	....	....	134.5	131.3	212.4
Mar.	245.3	230.5	195.4	265.6	266.0	....	....	134.6	131.3	210.1
April	245.5	230.7	196.4	265.0	266.2	311.6	244.1	135.0	131.8	214.1
May	245.9	234.4	201.4	267.4	267.9	....	....	135.0	131.2	210.2
June	245.4	242.7	211.4	273.9	274.1	....	....	135.3	132.5	211.0
July	245.0	239.1	209.7	268.4	272.2	....	....	136.2	135.4	211.6
August	244.9	221.1	172.1	270.2	248.9	313.1	244.2	136.1	135.1	214.6
Sept.	244.3	215.9	162.2	269.6	245.9	....	....	135.6	132.7	214.4
Oct.	244.3	214.7	163.7	265.7	241.0	....	....	135.6	131.0	215.1
Nov.	244.9	215.8	166.0	265.2	240.9	....	....	135.9	132.0	220.9
Dec.	246.0	220.3	175.1	265.5	243.1	....	....	136.8	133.2	221.1
1965										
Jan.	246.8	222.5	182.5	262.5	244.7	309.6	246.8	136.9	132.5	224.3
Feb.	246.4	224.9	182.1	267.7	250.7	....	....	137.2	133.1	223.1
Mar.	246.8	225.0	180.3	269.7	251.5	....	....	137.3	133.3	226.7
April	247.6	228.7	185.4	272.1	255.0	321.8	248.1	137.7	133.4	225.5
May	249.2	232.5	188.2	276.8	258.5	....	....	138.0	134.5	225.5
June	252.0	242.5	192.8	297.7	267.3	....	....	139.0	137.6	226.1
July	251.8	248.9	198.5	299.2	271.9	....	....	139.5	139.0	....

NOTE:—See earlier editions for index numbers previous to 1926.

SOURCE:—Dominion Bureau of Statistics, Ottawa.

(a) 1965 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

Population.—Canada's population rose to 19,604,000 at July 1, 1965 from 19,271,000 a year before and 18,238,000 for the June 1, 1961 census. Population estimates at July 1, since 1961, are as follows:

	July 1, 1961	July 1, 1962	July 1, 1963	July 1, 1964	July 1, 1965
	—thousands—				
CANADA	18,269	18,600	18,925	19,271	19,604
Newfoundland	459	471	482	491	498
Prince Edward Island	105	106	107	107	108
Nova Scotia	738	746	756	760	761
New Brunswick	599	608	614	617	624
Quebec	5,267	5,376	5,475	5,573	5,667
Ontario	6,247	6,351	6,462	6,604	6,746
Manitoba	923	936	950	959	962
Saskatchewan	296	931	934	944	952
Alberta	1,336	1,374	1,408	1,433	1,452
British Columbia	1,631	1,662	1,697	1,742	1,794
Yukon	15	15	15	16	15
Northwest Territories	23	24	25	25	25

Investment.—The mid-year review of capital spending intentions of all sectors of the Canadian economy—a joint project of the Dominion Bureau of Statistics and the Department of Trade and Commerce—indicates that current plans involve total capital outlays of $12.8 billion for 1965, and exceed the 1964 level by 19 per cent. This program, in both value and volume terms, would be the largest ever and would represent the sharpest annual increase in capital spending since 1956. It also entails a marked increase in investment spending for the second consecutive year. The quickened rate of expansion adds to pressures on the available supply of materials and labor. Meanwhile, new capital facilities are being created at an increasing rate and they add to the productive potential available to meet the rising demands of domestic and foreign consumers.

Exports.—Canada's commodity exports declined, in value, to $737.2 million in June 1965 from $795.9 million in June 1964 but rose to $4,019.2 million in the January-June period of 1965 from $9,935 million in the corresponding period of 1964.

Exports to the United States rose to $448 million in June 1965 from $396 million in June 1964 and exports to Commonwealth countries other than the United Kingdom and to preferential rate countries to $45.4 million from $40.6 million; exports to the United Kingdom declined to $99.3 million from $112.7 million and exports to all other countries as a group to $144.5 million from $246.6 million.

Exports to the United States rose to $2,359.5 million in the January-June period of 1965 from $2,092.9 million in the corresponding period of 1964 and exports to Commonwealth countries other than the United Kingdom and to preferential rate countries to $254.6 million from $225.3 million; exports to the United Kingdom declined to $571.2 million from $583.3 million and exports to all other countries as a group to $883.9 million from $1,033.5 million.

Consumer Prices.—Canada's consumer price index (1949 = 100) rose to 139.5 at the beginning of July from 139.0 in June 1965 and 136.2 in July 1964.

The food component of the index rose to 139.0 in July from 137.6 in June 1965, reflecting continued price increases for beef, pork and potatoes. Prices were also higher for various other items, including lamb, veal, celery, onions, turnips, tomatoes, grapefruit, bananas, apples, tea, eggs, margarine, butter and several other dairy products. Prices were lower for lettuce, cabbage, strawberries, grapes, sugar, oranges and orange juice, and ice cream.

OUR RESEARCH IN THE ECONOMICS OF FOOD CONSUMPTION[1]

L. E. DRAYTON

The Demand and Market Potential Section of the Economics Branch was established in July 1964, and now incorporates the Consumption Economics Unit of the old Marketing Section. This re-organization process involved a re-orientation of work with prime emphasis on demand analysis and projections of future demand for foodstuffs. These projections are needed to assist in the formulation of agricultural policy and long-run planning. The new Section also took over the duties of the Consumption Economics Unit with regard to economic research on food consumption and research on market potential for new and improved products of food origin. During the past year, nearly all of the resources of this Section have centered on work concerning demand analysis and demand projection. Plans for the future, however, include renewed emphasis on other aspects of the economics of food consumption.

In the field of projection of demand, preliminary draft reports have been written forecasting the demand for apples, pork and poultry meats in 1970 and 1980. Preliminary work has been carried out in relation to the projection of demand for dairy products and eggs.

Previous attempts to project demand for agricultural products in Canada have had to rely on United States studies for estimates of income elasticity. As income elasticity is the measure of response of demand to changes in income and income is a major economic factor in changing food consumption patterns, these estimates are an essential part of the projection schema. In our current work, our goal is to produce Canadian estimates of income elasticity and use these in our projections.

We are using two approaches in making these estimates. The first is an analysis of time series data; the second is an analysis of cross-sectional data. Time series data are available in the D.B.S. reports on per capita consumption, disposable income and retail prices. Consumption is related (by multiple correlation) to disposable income, price and prices of competing products. Numerous variants of these factors are available and there is a wide variety of choice as to the kinds of equation that may best express the economic relationship. Much time is required to test various combinations of factors and alternative equations, to achieve a satisfactory analysis.

The cross-sectional data are derived from the D.B.S. Urban Family Food Expenditure studies of 1955, 1957 and 1962. Taken together these studies provide over 5,000 records of household purchases for two-week periods. They also provide data on household income and various family characteristics. The data used pertain to meats, poultry meats, dairy products and margarine. The scope of the present study was deliberately limited to these products to keep the project within manageable proportions. Even so it has been an undertaking which would have been impracticable without the use of modern computers.

When completed this study will yield income elasticities of demand for each year and city for which data were obtained. It will also yield a great deal of additional information on the structure of demand such as the effect of various household compositions on the consumption of specific foods.

On the basis of data from a variety of sources, an analysis has been made of the household use of powdered skim milk. All uses of skim milk powder totaled about eight pounds per person in 1964. This is equivalent to about 88 pounds of fluid skim milk per person. The main uses of powdered skim milk are in food processing and the estimated eight pounds include some powdered skim milk which goes into the production of livestock feeds. As to household use, the 1962 Urban Family Food Expenditure study revealed that its fluid milk equivalent ranged from 15 pounds in Montreal to 59 pounds in Vancouver. If cities other than those included in the Urban Family Food Expenditure studies are added and considered, the range in consumption is even wider. A telephone interview survey indicated that large families, which probably have low incomes per person, are the heaviest users of powdered skim milk and of fresh milk. Also, families with children use more powdered milk per person than all-adult families. The mixing of powdered milk with fresh milk is a common practice.

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[1] Adapted from a paper presented at a meeting of the Canadian Council on Nutrition, June 7, 1965.

Reports are not yet available for any of the studies referred to above. However, we intend to publish reports on all these studies within the next few months.

Our work in market potential so far has consisted of simple studies of household acceptance of new products developed by the Food Research Institute. Published reports have not been planned and the studies have been of a preliminary character. The purpose has been to provide some appraisal of the possibility of a household market for these products if a food processing firm undertook production. Information on market potential is needed to interest processors in the production of these new foods. More extensive research than in the past may well be necessary to develop processor interest in new products. Consideration is also being given to exploratory studies of the potential of export markets for various foods.

The Agriculture Division of the D.B.S. is now revising the handbook "Food Consumption in Canada, 1926 to 1955". The revised edition will provide data up to 1963 and should be of great value to all those interested in analyzing and interpreting trends in food consumption patterns. Special consideration is being given to the estimates of waste in fruits and vegetables, between the farm and retail sale. It is necessary to rely on U.S. data as there has been very little research in this field in Canada. The U.S. estimates have been revised twice, generally downward, from the factors which have been used to date in Canada. Present plans are that a sliding scale will be used, linking the new waste factors over recent years to the old ones, that will be accepted as valid when published. This procedure recognizes that improvements in food handling practices have reduced the amount of waste in marketing channels. The estimates of waste will not be published in the revised handbook but will lead to revision in the estimates of per capita consumption.

The Canadian Dairy Foods Service Bureau, an organization financed by dairy farmers, conducted, through contract research, a large study on consumer attitudes to dairy foods. The report on this study, which may be obtained from the Dairy Foods Service Bureau, casts considerable light on variations in the use of dairy foods by various sectors of the Canadian population. However, no effort is made to estimate consumption per person for any product, all data being given on a per family basis.

The Radiation Protection Division, Department of National Health and Welfare, is currently analyzing data from a survey conducted in 1964 on consumption of milk by individuals. This is their second study, in this field, designed to add to our knowledge of the levels of radioactive elements in milk which may occur without creating a health hazard.

There is also a certain amount of research underway in this field, in universities and departments of provincial governments. The University of Manitoba has done considerable work in demand analysis. Appraisals of demand for agricultural products have been made in Newfoundland by ARDA and in Nova Scotia by Voluntary Economic Planning.

BEEF AND BEEF CATTLE IN CANADA'S FARM ECONOMY

V. W. YORGASON

The relative importance of beef cattle in Canada's farm economy has increased steadily since the war as is well indicated both by the increase in farm income from the sale of cattle and calves, and by the rising proportion of income from cattle in relation to total farm income. In 1946, for example, farmers and ranchers received $257 million from the sale of cattle and calves, which then represented 15 per cent of total farm income. These sales ranked third below wheat and dairy as a source of farm cash income. In 1963, sales climbed to $639 million, which made up a 20 per cent share of total farm income and pushed these sales up to the top of the ladder for the sixth time in seven consecutive years, well ahead of both wheat and dairy in terms of money in the farmers' and ranchers' pockets. Figures for 1964 are not yet available, but available information leads one to expect that farm income from the sale of cattle and calves will reach $650 million.

Increasing Demand.—The rise in income from the farm cattle business stemmed from a growing North American market for beef and from the ability to meet that demand and greatly increase beef production. This beef market finds a strong basis in the rapid increase in population in Canada and the United States combined, from 141 million in 1946 to 211 million in 1964. It gathers further strength from the increase in consumption per head of population from 67 pounds in Canada and 62 pounds in the United States to 79 and 100 pounds respectively in the same two countries. Some people would ascribe the higher rate of increase in consumption in the United States than in Canada to the increasingly wider outlet for sales of Canadian feeder cattle to the United States. Plentiful feed grain supplies in the U.S. and a strong market for beef there have given quite a boost to feeding operations. Canada was a bit laggard and took a few years to enjoy the same set of favorable circumstances.

Increase in Cattle Numbers.—Total cattle population in Canada and the U.S. has risen fairly consistently since the late forties; it declined only during the drought years of 1957 and 1958, and then proportionately more so in the United States than in Canada. Milk cow numbers have declined over this period, but the rapid expansion in beef cow, heifer, calf and steer populations much more than offset this decline. Over the 1950-54 period, cattle numbers in Canada increased from 8.3 million to 12.8 million head. Milk cow numbers, included in the total for cattle numbers, dropped from 3.1 million head in 1950 to 2.9 million in 1964. Beef cow numbers increased at an almost phenomenal rate, increasing from 961 thousand to over 2.7 million head. In the U.S. cattle and calf numbers rose from 78 million to 107.0 million head from 1950 to early 1965. Milk cow numbers dropped from 23.9 million to 18.0 million head, but beef cow numbers rose from 16.7 million to 32.0 million head over the same period.

Beef type cows and heifers comprise more than 60 per cent of the total female herd in the United States. In Canada, however, beef herds comprise about 50 per cent of Canadian total female breeding stock. Dairying predominates in Eastern Canada, while beef-type cattle are concentrated in the Western provinces, primarily Alberta and Saskatchewan. In Ontario the importance of the beef industry must be assessed not solely in relation to the number of beef cows, currently about 359,000, but also in relation to the number of Western feeder cattle, an average of about 250,000-350,000 a year, fed in Ontario. About 80 per cent of our beef herds are in Western Canada, and most of the remainder are in southwestern Ontario.

Export Trade.—Since 1957, Canadian sales of feeder and slaughter cattle have ranged from a high level of 611,000 in 1958 to a low level of about 122,000 in 1964. In 1961 and 1962, our feeder cattle exports averaged about 425,000 head a year, but dropped to 90,000 in 1964. The U.S. market has often provided an important safety valve for our market whenever fed cattle exceeded our requirements, and, as was quite clear in the spring of 1964, this is a two-way market; Canada then imported fed cattle from the U.S.

When Canada's supply of cattle is short, that is when this supply is such that Canadians are willing to pay more than the equivalent of the U.S. price on an export basis, the price at Toronto will move up until live cattle can be brought in from the U.S. Midwest. Buying costs, including freight, duty, exchange and handling run about $4.25 a hundredweight in Canadian dollars.

So, when we are on an "import basis", prices at Toronto, in Canadian dollars are about $3.50 a hundredweight over Chicago prices in U.S. dollars, at the current rate of exchange. The Canadian cattleman receives the highest price possible in North America, and the price at Chicago plus importing costs set a ceiling above which prices at Toronto cannot rise. Thus, if prices at Toronto were $24.75 a hundredweight for choice steers, the Chicago price would have to be below $21.25 a hundredweight for the equivalent U.S. grade before cattle would move into Canada.

When fed cattle are in heavy supply in Canada—when the domestic market will not absorb the cattle at a price higher than the equivalent of the return from export, the domestic price will drop down to this level, and fed cattle will then move generally from Southern Alberta to the Pacific Northwest, and from Ontario to New England and the U.S. Midwest.

When we are on an export basis, prices at Spokane will be about $2.00 a hundredweight below Calgary prices, and Calgary prices would be about $1.50 below prices in Toronto. Canadian cattle sell at the lowest level of prices in North America, and the return on cattle exported from Canada sets the floor below which price levels in Canada do not generally fall.

Usually Canadian prices for fed cattle are high enough so that few cattle are exported, but also low enough so that few cattle are imported either. For example, from January 1, 1963, to April 1963, prices were on an export basis, and about 14,500 head were exported. From April 1963 to December 1963, prices remained below the import level but above the export level. A few head were exported in early 1964 but by April 20, 1964, prices moved to the import level, and about 31,000 head were brought in in the spring and summer. During the summer of 1964, the balance again shifted and exports continued to the end of 1964.

Performance Testing.—Beef is beef, but not all beef is of the same quality. The type of cattle required for today's feedlots are cattle that will grow quickly, are cheap to feed and will finish with a high proportion of lean red meat. It is therefore quite important to identify the animals in purebred herds that can produce animals that will meet the requirements of feeder, packer, retailer and consumer. Because these factors are largely inherited, selection of sires is of major importance.

A beef producer has three means of obtaining information needed for selecting sires with the desired characteristics.

(*a*) The registered beef breeder can get records containing the necessary information on which to base his selection for his herd sires from either the Federal-Provincial Record of Performance (R.O.P.) or, if he is in Ontario, from the Ontario Herd Test Program.

(*b*) After a few annual R.O.P. or herd tests, he can compare the performance of his individual bulls or groups of bulls through station-testing with other bulls of the same age from other herds.

(*c*) He can then compare the performance of purebred and commercial steers sired by performance-tested bulls.

The steady growth in Canada of the Federal-Provincial Record of Performance Program for beef cattle since its inception in 1956, and of the Ontario Advanced Registry Policy for beef cattle is ample evidence that our breeders of purebred cattle know what to do when it comes to the job of improving their cattle herds.

Participation in the Ontario Herd Test Program for beef cattle has increased to the point where about 950 bulls a year have been tested since 1961. For the year ending March 31, 1963, 938 bulls were tested by 239 breeders. Twenty herds were at that time registered under the Herd Test Plan and 488 bulls, 592 heifers, and 78 steers were tested in these herds.

Participation in the R.O.P. program has grown from 329 calves from 15 herds tested in 1956-57 to 7,199 calves from 227 herds in 1963-64. The objective is to provide the purebred beef breeders with a herd test that will facilitate "within-herd" improvement, which, in turn, will influence the performance characteristics of breeding stock available to the commercial cattle industry. Performance records accumulated to date emphasize the variation that exists in the ability of individual animals within a herd to gain and offer an excellent basis for selection to improve herd efficiency.

In the early years of performance testing, attention was directed primarily to individual performance, but there has been a steadily broadening concept to include all factors important in breeding a highly efficient beef animal. This has emphasized a shift from individual performance to the testing of the development of carcass-appraisal techniques.

The growing progeny use of artificial insemination in beef herds has created a need for progeny-testing, and progeny-testing on a large scale is virtually impossible without artificial insemination. Consequently, artificial insemination becomes both a cause for and a means to accumulate information on beef sires.

The formal recording of artificial insemination statistics was initiated in Canada in 1955. Since that time, services by Hereford bulls have been second only to services by Holstein-Friesians. Most of these services are to dairy cows in farm herds across the country, but there is an ever-increasing number of beef herds with artificial breeding programs.

With the widespread use of A.I. beef sires throughout Canada, it becomes increasingly important to appraise the value of these sires. The potential of artificial breeding in a beef improvement program has increased the use of progeny-testing to ensure that the beef industry will derive the largest benefits possible from the use of A.I. This led to the development of co-operative progeny test projects in Alberta and British Columbia. In the 1961-1964 period, 21 Hereford and 2 Angus sires have been progeny-tested through their straightbred commercial offspring. Moreover, some sires of these and of other breeds have been judged through cross-breeding, mainly with Hereford females. The appraisal of all these sires has been on the basis of live and carcass performance cut-out. Results to date indicate that definite variations exist in the live performance of the sire progeny groups, also in carcass values, but the greatest difference is evident in growth factors under the control of the producer.

The Current Situation.—The outstanding feature of today's beef market is the willingness, of Canadian consumers, as a group, to purchase and eat an average of over 25,000 head of cattle a week in 1964, and 27,000 head a week in the first half of 1965 and that at fairly satisfactory prices to the whole beef industry. Before 1963, any time that gradings in the two top grades went above 18,500 a week, it soon became necessary to export. This growing domestic outlet, built up by a rapid growth in population, a booming economy, and an increasingly higher average consumption per head, has even led Canada to become a significant importer of fed cattle in the spring of 1964.

No less amazing than the strength underlying the domestic beef market has been the ability of Canadian cattle feeders to rise to the challenge. In 1951, choice and good grades made up 24 per cent of the total slaughter, but by 1956 the proportion had risen to 37 per cent. In 1963, slaughter of choice and good grades made up almost 52 per cent of total gradings. In 1964, not counting imports, slaughter of Canadian-raised good and choice grade cattle made up 54.3 per cent of total slaughter. This compares quite favorably with the 60 per cent figure for United States. It is quite possible that the rapid expansion of production of fed-beef has been in no small way responsible for today's consumer preference for beef.

The large increase in cattle in feedlots over the last two years has led to a greater output than consumers are prepared to buy at prevailing prices in the U.S. The rate of expansion in beef cow herds has slowed down from the rapid rise in the 1958-63 period, but there will be abundant supplies of beef on this continent for the next two years. However, the market undertone is strong because of the readiness of consumers to buy more beef when prices tend to slide downward. A small drop in supply and more regular marketing could probably have a very beneficial effect on prices. Plentiful supplies of feed grains in the U.S. and Canada will maintain a strong demand for feeder cattle.

Grass and water shortages are the main threat to the cattle industry. Widespread unfavorable weather on this continent would force a reduction in beef cattle numbers and low prices and severe losses would undoubtedly follow. Cattlemen, therefore, should not overstock when prairie moisture conditions are not highly favorable. After the hard winter of 1964-65 replacement of depleted winter forage reserves became of utmost importance. The proven practice of adjusting cattle numbers to the normal carrying capacities of ranges and pastures will ensure a reserve, built up in the best years, and prevent liquidation of cattle herds or too much of a decrease in herd size, when weather is not quite so favorable.

One may wonder if 1965 will be a good year for cattle feeders or ranchers in Canada, as there are still large numbers of cattle that can be finished in feedlots in Canada and the United States. Prices should remain at or above 1964 levels for most of the balance of 1965, however. Exports of feeder cattle to our neighbours may be only 125 thousand head in 1965, slightly above shipments in 1964. There are indications, however, that increases in cattle numbers have come to a standstill in the U.S. and, with smaller imports of beef into that country, its market may get rid of most of its beef surplus in 1965. Provided weather conditions remain favorable, Canadian producers can look for increased exports of both fed and feeder cattle in 1966 and 1967, and rising prices for both fed and feeder cattle.

EUROPEAN FARMERS' VIEWPOINTS ON AGRICULTURAL POLICY—*(Continued)*

There is nothing to prove that the consumer is unable to pay for one of his essential needs, when he incurs expenses for things which are not urgently needed, if not superfluous. A pyramid which lays on its apex may be put back on its base. This, in any case, could be done in a gradual manner.

It would indeed be a paradox if, in their efforts to better their techniques and increase production, farmers were to find themselves increasingly under the economic rule of their suppliers, or of the purchasers of their products, because they resort more and more to industrial methods of production, increase their sales to processors or sales in the market, and make greater use of marketing facilities.

Economic expansion, which stems from the dynamism of industry and of the labor of workers in all spheres of production, ought to be welcomed by agriculture, since it opens more market outlets, provided it be geared with expansion in the agricultural sector and does not exert its influence to damage the terms of exchange.

European farmers may not all speak with a common voice but they are at least searching for common goals and realize that national boundaries are not or should not be considered as national barriers impeding concerted stabilization, development and expansion activities.

What the European farmers are looking for, in this matter, is the development of modes of mutual aid and action that will enable them to plow back into production part of the savings realized on services and activities connected with purchases of supplies, sales of farm products, processing, insurance, and credit. Co-operation among farmers, freely arrived at, will strengthen their efforts and multiply their economic weight, give them a more valuable experience, give them added ability, as they become more and more conversant with market mechanism, to devise effective production and marketing programs, at the farm, regional, national and supranational levels.

The Farmer and the Hierarchy of Social and Economic Values.—The farmer wishes to make the best possible use of science and new techniques in strengthening his production and marketing power. He also wishes to retain control over the agricultural sector of the economy, the products of his labor and management, his professional and business organizations, etc. The chief concern is concern for the farmer as a man playing a vital role in social and economic life. Efforts to arrive at economic regional and international agreements in agriculture have many of the aspects of a peace treaty where all parties find some mutual advantages, and where none of the parties exhausts itself in a vain effort to destroy the other in an economic war.

A systematic search for harmony in the exchange of knowledge, and in the exchange of goods and services is much more commendable and offers a greater promise for the future and the social and economic welfare of all parties than the deliberate search for autarky by one or a group of countries.

The right way shall be found in a sound and flexible policy geared toward an increase in international trade and other international relations, in a market organization that will protect the interests of the producer, his labor and his investments, as well as the free flow of and the guarantee of regular supplies.

Agriculture is the concern of men who desire to retain control over their own affairs while endeavoring to meet several of the essential needs of other men. The march of events calls for various type of production, marketing and other economic adjustments but there are fundamental values that must subsist. Mr. Blondelle puts up a strong fight for other survival. He takes a dim view of a situation that would place agriculture, as a profession, in the role of an inferior always confronted by powers or administrative services who, supposedly, always know more than the farmer himself about his own problems.

The Small Family Farm.—Canadians have heard a great deal, in recent years, about the small family farm. Were they to travel in the agricultural regions of Europe they would find the same concern there for this type of farm. The owner of a small farm and his family do not look at the future with pink glasses. They tend to be discouraged at the sight of their economic evolution that, supposedly, proceeds apace at their expense and to the benefit of larger enterprises.

They know, however, that they cannot put a halt to economic progress. They know about the goals of the European Common Market. They know that agricultural leaders, with a voice in E.C.M. affairs, encourage farmers and farmers' organizations to pool their resources so as to achieve greater efficiency.

The small-farm owners want to modernize their equipment, to mechanize their farms, but they can do so only at a cost. Our farm and other newspapers occasionally tell us, for example, of the flight of the "breton" farmer. This farmer, the same as farmers elsewhere, must buy a large part of his inputs or production supplies from industry. He incurs debts to buy tractors and other machines and later finds that his farm is too small to make a real good economic use of this equipment and that his investment turns into a paralyzing indebtedness. He becomes utterly frustrated, he inveighs against society and, to protest against his sad fate, he incurs the enmity of that society by cutting down telegraph poles and erecting road barriers against motorists who have nothing to do with his predicament. He may end up giving away his products, for no more than a token payment, just to get rid of them.

Those who seriously consider ways and means of relieving this distress situation trust that it is only a phenomenon that characterizes the transitional stage in the movement of surplus labor out of agriculture. They also point to the more enviable position of several groups of small farmers in Germany, Denmark, and in the United Kingdom.

Those who believe in the lasting power of the small farm claim that each individual farm should search for its own best functions and that these functions must have a high degree of flexibility since they may vary from year to year. Each one must find out which service it can render better than anyone else, at any given time, either because it is in a better position to do so or because others are unable to see or take advantage of special opportunities.

Transport costs are high in agriculture. A local farmer, though, may work for a nearby market if he is close to a city, an industrial area, or a food processing plant.

The existence of a co-operative agency or of another efficient marketing agency may offer distinct possibilities if they are equipped to ship products over long distances, in a raw or processed form.

Some areas are well adapted to the production of special crops, and some farmers have the ability to place special products on the market. The emphasis here is on quality. Markets for high-quality products are continuously widening and the small farmer that has or develops the ability to supply these markets may find there a way to survive.

The small enterprise, in agriculture as well as in industry, finds in its flexibility an enviable advantage over the larger enterprise. The owner or manager of that small enterprise, if endowed with imagination, initiative and energy, may find a new way of doing things or a way of doing new things, and does not have to lose very much time in swinging into action.

CONSUMPTION OF POWDERED SKIM MILK IN CANADA

L. E. DRAYTON

In 1945, Canadian consumption of fluid milk including cream as a milk equivalent, as reported by the Dominion Bureau of Statistics, reached a record level of 444 pounds per person. In 1964, it was only 322 pounds per person, a decline of 27 per cent. Per capita consumption of evaporated whole milk, on the other hand, had increased from 12.6 pounds in 1945 to between 16 and 18 pounds in most of the last few years. The increase in consumption of skim milk powder had been even sharper, climbing from 2.7 pounds per person in 1945 to 8.0 pounds per person in 1964.

Eleven pounds of skimmed milk are needed to produce one pound of powder. Hence, it may well be inferred that the decline in fluid milk and cream consumption ensued largely from the substitution of skim milk powder for fluid whole milk. One does not find it too difficult to explain, why such a substitution may have occurred. During 1964, the Canadian average retail price of powdered skim milk, as reported by the Dominion Bureau of Statistics, was 108.3 cents for three pounds. As a three-pound package of skim milk powder will yield 12.8 quarts of reconstituted skim milk, this price is equivalent to 8.5 cents per quart of milk. Meanwhile, the average Canadian retail price of fluid whole milk was 24.6 cents a quart. In 1963 and several previous years, the price advantage for powdered skim milk had been even larger.

Nutritionally, powdered skim milk differs from fluid whole milk in that it does not include the fat portion of milk and fat-soluble vitamins. Add this fact to the widespread belief that the Canadian diet includes too much fat and the fact that fat soluble vitamins are available at low cost from other sources and then you may find it easy to understand why many people might substitute powdered for fresh milk.

Powdered milk has replaced fresh milk, in varying degrees for industrial as well as for home uses. Powdered milk serves in the preparation of many processed, semi-prepared and prepared foods. Formerly, fresh milk or fresh cream were used for some of these purposes. There was also various new products containing powdered milk which replace foods that contain fresh milk when prepared in the home.

We shall attempt to demonstrate, in this article, the extent of the substitution of powdered for fresh milk, especially for household uses. In doing this we shall use data and research findings from five different sources, namely:

(1) Dominion Bureau of Statistics report on production of powdered milk.
(2) The Urban Family Food Expenditure studies of 1957 and 1962[1].
(3) Telephone interviews by a private market research firm in 18 cities.
(4) An Economics Division (Branch) study of milk consumption in 18 cities[2].
(5) A consumer interview study on dairy products conducted by a market research firm for the Dairy Foods Service Bureau[3].

None of these research projects were designed primarily to establish the extent of substitution between powdered milk and other types of milk and to some extent they conflict in their indications as to the nature and extent of this substitution; nevertheless, taken together, they contain much that is useful in making estimates of consumption of powdered skim milk, by various types of families in certain cities of Canada, and of the extent to which consumers substitute this type of milk for fluid milk.

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[1] The data pertaining to milk of the 1957 Urban Family Food Expenditure study were analyzed in detail in Johnston, Charlotte I., Urban Family Expenditures for Certain Milk Products, 1957, Economics Division, Canada Department of Agriculture, 1963.

[2] LeBel, Gilles, Fluid Milk Consumption in Selected Canadian Markets, 1958-61, The Economic Annalist, December 1962, pp. 127-131.

[3] A Study of Dairy Foods. Summary and Analysis of Results, Canadian Dairy Foods Service Bureau, Toronto, October 1964. The Dairy Foods Service Bureau is an advertising and promotion organization financed by dairy farmers.

Domestic Disappearance of Powdered Skim Milk.—Total production of powdered skim milk in Canada rose from only 53 million pounds in 1950, to 213 million pounds in 1961 and then declined to 176 million pounds in 1963 (Table 1). Canada produces considerably more powdered skim milk than it uses domestically. Domestic disappearance, however, skyrocketed from 47 million pounds in 1950 to 153 million pounds in 1961; it declined somewhat in 1962 but returned to the 1961 level in 1963 and 1964.

Most of the skim milk powder produced is packed in large containers suitable for use by food processors and for export. The quantities packed in small containers, 5 pounds and under and 6 to 24 pounds, are reported separately. The powder, thus packed, is instantized to improve its convenience for household use as retail stores do not generally, if ever, handle larger containers, it is usually assumed that the reported pack in small containers, adjusted for fluctuation of the volume in marketing channels just about equals household purchases of skim milk powder.

Table 1.—Domestic Disappearance of Powdered Skim Milk in Canada, 1950-1963

Year	Total production	Domestic total disappearance	Domestic disappearance per person	Production packed in consumer containers	
				Total	Per person
	—000 pounds—		—pounds—	—000 pounds—	—pounds—
1950	53,263	46,817	3.41	—	—
1951	52,748	52,052	3.72	2,656	0.19
1952	88,229	50,727	3.51	4,841	0.33
1953	82,914	65,472	4.41	5,936	0.40
1954	83,332	71,768	4.69	8,125	0.93
1955	87,115	80,474	5.13	10,209	0.65
1956	79,005	81,736	5.08	10,748	0.67
1957	120,710	90,064	5.42	14,404	0.87
1958	185,625	109,673	6.42	19,342	1.13
1959	176,437	121,302	6.94	21,380	1.22
1960	171,969	122,749	6.87	33,599	1.88
1961	213,029	153,277	8.40	41,968	2.30
1962	192,292	132,977	7.16	39,108	2.11
1963	176,086	153,049	8.10	36,604	1.94
1964	203,047	153,517	7.97	34,422	1.79

The pack in consumer-sized containers reached a peak of 42 million pounds (2.3 pounds per capita) in 1961 but has since been declining. In 1964, it amounted to 1.8 pounds per person, or the equivalent of about 20 pounds of fluid milk. One should not assume that all these 20 pounds directly replaced fluid milk in the diet. Some households that use skim milk powder probably have a higher intake of non-fat milk solids than they would have if skim milk powder were not available.

Families reporting in the 1962 Urban Family Food Expenditure study spent an average of 1.6 cents per person per week on powdered skim milk[1].

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[1] See footnote 3, p. 48 for description of sample used.

As powdered skim milk then cost $1.00 per three-pound package, this represented an average consumption of 2.5 pounds per person per year. The estimate of consumption, based on production packed in consumer containers for 1962, was 2.1 pounds per person. Thus, it would appear that urban families of the types included in this study consumed about 20 per cent more powdered milk per person than all Canadians taken as a group. If both estimates are correct, rural families and families in small cities and towns consumed considerably less powdered milk per person than families in large cities.

As 37 million out of 153 million pounds of powdered skim milk consumed in 1963 were reported to have been sold in consumer-sized packages, it would appear that 116 million pounds found their way into industrial uses[1]. The bakery industry was presumably the largest user. We know in any event, that it did use 27 million pounds of powdered milk in 1961, the most recent year for which data are available[2]. This high usage arises largely from the fortification of bread to attain the Canada Approved standard. Other important users are meat packers for sausages and other products, the dairy industry for cheese, ice cream mix, and reconstituting, and the miscellaneous foods industry for such products as cake mixes. Some, but not all of the over-all industrial use of milk powder, represents a type of substitution for fluid milk which leads to a lower fresh milk consumption. The remainder, excluding amounts used in production of animal feeds, should have the effect of increasing total intake of non-fat milk solids. We estimate that not more than six pounds of skim milk powder per person, including that sold direct to consumers, actually replaces fluid fresh milk.

Available Data on Variations Between Cities.—The apparent domestic disappearance data discussed in the foregoing section casts no light on variations in the use of skim milk powder among sectors of the Canadian population. The Urban Family Food Expenditure studies of the Dominion Bureau of Statistics probably provide as reliable data as is practicable to obtain on the expenditure for skim milk powder by families of the categories surveyed[3].

Another source of data on household use of powdered milk is found in a telephone survey conducted by a market research firm. This firm included the following questions on powdered milk in interviews conducted during March 1963:

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[1] This includes more than 11 million pounds of powdered skim milk used by feed manufacturers in 1961.

[2] Dairy Products Industries, 1961, Industry Division, Dominion Bureau of Statistics, 1964 reports that 130.6 million pounds of powdered milk were used in dairy factories. However, this figure includes powdered milk that was instantized and powdered milk that was repackaged for various reasons. The Dairy Division, Canada Department of Agriculture, on the basis of its knowledge of the dairy industry, estimates that the amount of powdered milk used in that industry for such purposes as cheese and ice cream manufacture and reconstituting is considerably less than the 27 million pounds used by the bakery industry.

[3] For the 1957 survey, the sample was restricted to households with incomes ranging between $2,500 and $7,000 for the following eight family types: two, three and four adults; two adults and one, two, three and four children; and three adults and one child. The survey was limited to the cities of Halifax, Montreal, Toronto, Winnipeg and Vancouver for the calendar year 1957. Data were also obtained for a small sample of St. John's, Newfoundland families for the period from September 1957 to August 1958. The households sampled were of types which embrace between 50 and 60 per cent of the population of the cities studied. For the 1962 study, St. John's was included in the group of cities for the identical year and Edmonton was added. The income range was raised to $3,000 and $7,500 owing to the growth in per capita income during the intervening period. The family types surveyed were not changed. Data on family characteristics were obtained by interviewing the housewife at her home. Those who were included in the final sample kept weekly diaries of all their expenditures on foods. These diaries were kept for two successive weeks in 1957 and four successive weeks in 1962. The basic sample in both years was about 150 different families each month distributed on a proportional basis among the survey cities. Thus, the total survey sample was 1,743 in 1957 and 1,841 in 1962, after allowing for loss through unsatisfactory diaries and other types of inadequacy. The diaries reported expenditures rather than quantities purchased.

"During the past week, have you used any POWDERED MILK? What brand?

How many quarts did you use YESTERDAY?"

Questions of a similar nature were asked with respect to use of fluid milk from three different sources, namely, dairy, at the door, special milk stores and other stores. Data were also obtained on the age of the housewife, the total number of persons in the family and the ages of children living at home[1].

The housewife was asked to report family consumption of milk in terms of quarts used "yesterday" and the figures for individual families lacked precision. The modal quantity of milk reported from each of the four specified sources was less than three quarts and most of the housewives reported a round number of quarts. This would indicate that interviewers and respondents generally made little attempt to report the precise quantity of milk used, but rather contented themselves with a rough approximation that could be simply expressed in a round figure.

Responses in telephone interviews were also subject to a considerable upward bias. This was established by comparisons with data on national per capita consumption data on sales of milk in the same 18 cities[2], and data from the 1962 Urban Family Food Expenditure study. Because of this bias, and of the rough nature of the estimates provided, the actual consumption of milk indicated is not reported here. Rather, the indicated consumption for cities and family composition groups is reported according to the following scale:

(1) Very high, over 125 per cent of the telephone sample average.
(2) High, 111 to 125 per cent of the telephone sample average.
(3) Average, 90 to 110 per cent of the telephone sample average.
(4) Low, 75 to 89 per cent of the telephone sample average.
(5) Very low, under 75 per cent of the telephone sample average.

The ratings "very high", "high", "average", "low" and "very low" are used in the following discussion of consumption of fluid and powdered milk as indications of relative levels of consumption. Despite the weaknesses of the telephone interview survey data the broad indications drawn from it should be valid.

City Variations in the Use of Powdered Milk.—The Urban Family Food Expenditure study of 1962 demonstrates that there is considerable variation in the use of powdered milk per person by families of the types sampled among cities. Its use per person would appear to be four times as great in Vancouver as in Montreal, with the other cities being at intermediate levels (Table 2). These data would suggest that there is a higher per capita usage of powdered milk in both Eastern and Western Canada than in Central Canada.

The telephone interview data confirmed this in a general way. All Ontario cities included and Montreal, had either low or very low household consumption rates for powdered milk. On the other hand, three of five cities east of Montreal reported either high or very high consumption of powdered milk. Saint John was an outstanding exception in Eastern Canada; it had a very low consumption of powdered milk.

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[1] The total sample was about 8,100 families in 32 cities. However, the data purchased for this report covered only 18 cities with a total sample of 4,595 families. This sample was a close approximation to a random sample of those families listed in city telephone directories. In the larger metropolitan areas, between 92 and 97 per cent of the households have telephones. The actual sample coverage would not be quite this good as the telephone numbers for some households are not listed.

[2] LeBel, Gilles, op. cit.

West of Ontario, six out of seven cities have either high or very high household usage of powdered milk. The exception is Winnipeg, where household usage is about average.

There is some general relation between fresh fluid milk consumption per person and household usage of powdered milk but this is not very marked. In Table 2 cities are arranged in declining order of volume of fluid milk consumption in 1961. Increases in consumption from 1961 to March 1963 are indicated in column two. In most cities, these are little, if any, greater than might arise from population growth. Nevertheless, some cities like Toronto and Ottawa-Hull evidently had increases in per capita consumption while others like Windsor and Sydney appear to have had declines. These changes would be small and would have little effect on the ranking of cities as to fluid milk consumption. Thus, the clustering of "lows" and "very lows" for powdered milk at the top of this table, i.e. among cities with a relatively high rate of fluid milk consumption, suggests some inverse relation between fluid and powdered milk consumption. But this relation is not consistent in that Saskatoon, near the top of the table, has a very high household usage of powdered milk and Saint John, near the bottom of the table, a very low one.

Table 2.—Relation Between Consumption of Powdered Milk and Consumption of Fluid Milk, 18 Cities, Canada

City	Fluid milk consumption 1961[a]	Increase in consumption 1961-1963[b]	Consumption of powdered milk, 1962[c], fluid milk equivalent	Consumption of powdered milk March 1963[d]
	—pounds per person—	—per cent—	—pounds per person—	
London	340	6.4	—	Low
Windsor	340	1.6	—	Very low
Hamilton	311	8.4	—	Very low
Saskatoon	302	5.9	—	Very high
Ottawa-Hull	294	14.3	—	Low
Edmonton	290	9.9	39	High
Toronto	286	16.6	28	Very low
Winnipeg	281	5.4	32	Average
Regina	269	2.9	—	High
Halifax	266	6.4	37	Very high
Montreal	264	10.0	15	Very low
Vancouver	258	3.4	59	Very high
Sydney	258	2.4	—	Average
Calgary	254	11.4	—	High
Québec-Lévis	254	8.3	—	Very high
Saint John	248	7.4	—	Very low
Victoria	244	11.4	—	Very high
Three Rivers	236	6.5	—	High

[a] LeBel, Gilles, Fluid Milk Consumption in Selected Canadian Markets 1958-61, The Economic Annalist, December 1962, pp 127-131 These data are based on fluid milk sales as reported to the D.B.S. by milk distributors.

[b] Percentage by which total fluid milk sales in March 1963 exceeded average monthly fluid milk sales in 1961. Most of this increase would be due to population growth rather than gains in per capita consumption.

[c] Based on Urban Family Food Expenditure study 1962, Prices Division, D.B.S. Expenditure only was reported.

[d] Based on data supplied in telephone interviews. The following percentages of the survey average consumption o powdered milk are indicated by: Very low, Less than 75: Low, 75-89: Average, 90-110: High, 111-125: Very high, over 125

In six of these cities, namely:—London, Windsor, Hamilton, Ottawa-Hull, Toronto and Winnipeg, over 50 pounds of low-fat fresh milk per person were consumed in 1961[1]. All the foregoing cities, except Winnipeg, are below average in their consumption of powdered skim milk. Two-per-cent milk was not available before 1961 in Saskatoon, Regina, Halifax, Sydney, Saint John and Three Rivers. These six cites include four of those in which consumption of powdered milk was above average in March 1963. Thus, there is a tendency to have low usage of powdered milk in cities where two-per-cent milk is popular and high usage of powdered milk where it is not available.

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[1] See LeBel, op. cit., p. 130 for additional data.

In 1963, the price of home-delivered fluid whole milk was 23 cents a quart or lower in Saskatoon, Edmonton, Montreal, Calgary, Québec-Lévis, Saint John and Three Rivers. Five of these seven cities were above average in their household consumption of powdered milk but the remaining two, Montreal and Saint John, were very low. In the remaining 11 cities, prices for home delivered milk were higher. These cities included five where household use of powdered milk was below average. Thus, it appears that relatively high fluid milk prices had not been a major cause of greater acceptance of powdered milk in some cities than in others. The availability of two-per-cent milk in most of the cities with relatively high prices for homogenized milk probably accounts for this fact.

The proportion of families reporting powdered milk only on the day of interview was less than 10 per cent in all cities (Table 3).[1] It was also smaller than the proportion reporting no milk in 13 of the 19 city groups.

Table 3.—Proportion of Families Reporting Powdered Milk, Telephone Data, 18 Cities, Canada, March 1963

City	Families in sample	No milk[a]	Proportion of families reporting		
			Powdered milk only[a]	Powdered plus fresh milk	Any powdered milk[b]
	—number—	—per cent—			
London	277	2	[c]	14	14
Windsor	278	4	2	5	7
Hamilton	273	4	1	4	4
Saskatoon	218	5	2	33	34
Ottawa–Hull	273	3	3	13	16
Edmonton	277	5	4	16	20
Toronto	270	5	4	6	10
Winnipeg	281	5	4	10	14
Regina	215	2	4	16	20
Halifax	211	4	2	23	26
Montreal, French	209	2	2	18	20
Montreal, English	218	7	1	9	10
Vancouver	276	9	4	29	33
Sydney	215	4	4	15	19
Calgary	225	12	3	19	22
Québec–Lévis	237	3	6	27	33
Saint John	215	2	1	11	12
Victoria	217	6	3	19	22
Three Rivers	215	1	7	17	24

[a] Some of these families may have used canned milk or cream.
[b] Not always sum of "powdered milk only" and "powdered plus fresh milk" as a result of rounding.
[c] Less than 0.5.

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[1] These data are not as precise as Table 3 suggests. Some of those reporting no milk probably used canned milk or cream. Others who did not use milk on the day of the interview would consume milk from time to time. On the other hand, the proportion using "powdered milk only" would be overstated as some of those who reported this on the day of interview would occasionally use other forms of milk. Nevertheless, the proportions using "powdered plus fresh milk" and "any powdered milk" would be understated as some occasional users would not have used it on the day of the interview. Despite these discrepancies, the general picture presented should be valid.

As little as four per cent of the families in Hamilton and as many as 34 per cent in Saskatoon reported the use of some powdered milk on the day of the interview. In all cities, more families used powdered milk plus fresh milk than used powdered milk only. On the other hand, the supplementation of fluid milk with powdered and/or its replacement in certain uses has become quite general in several of the cities studied.

As many families use powdered milk only occasionally, the proportion reporting its use on the day of interview badly underestimates the number who ever use it. The Dairy Foods Service Bureau found that 28.5 per cent of all households used skim milk powder[1]. This proportion varied by region from 20 per cent of the English-speaking families in Quebec to 44 per cent of the British Columbia families. However, half the using families reported that they used powdered skim milk only occasionally or in emergencies. This suggests that for most cities the proportion of families who ever use powdered milk is close to double the proportion that reported its use in the telephone survey.

Family Size and the Use of Milk.—Large households use less milk per person than do small households. A definite, clear-cut picture to this effect emerged from this study for the 18 cities taken together (Table 4). There was a steady decline from very high to low usage of fresh milk and total milk as family size increased. On the other hand, usage of powdered milk per person rose from very low in two-person families to very high in families of over six persons. The families of over six persons reported using more than twice as much powdered milk per person as the two-person families. Likewise, the proportion of families reporting the use of powdered milk increased consistently and substantially with family size. Variation in the average size of families reporting was not a significant factor in determining the variations in reported fresh milk consumption per person by city[2].

Table 4.—Consumption of Milk per Person as Related to Family Size, Telephone Data, 18 Cities, March 1963

Persons in family	Number of households	Consumption of milk per person[a]			Proportion reporting milk[b]	
		Fresh	Powdered	Total	Fresh	Powdered
				—per cent—		
1	209	Very high	Average	Very high	79.4	8.1
2	955	High	Very low	High	91.2	9.5
3	836	Average	Very low	Average	93.2	11.0
4	1,044	Average	Low	Average	94.7	18.4
5	760	Average	Average	Average	94.3	26.2
6	424	Average	High	Average	93.6	30.2
Over 6	367	Low	Very high	Low	92.1	36.0

[a] Percentages of the survey average are indicated as follows: less than 75, very low; 75-89, low; 90-110, average; 111-125, high; over 125, very high.

[b] Of survey families in family size group.

Family Composition and the Use of Milk.—The telephone data did not indicate much relation between family composition and the use of fresh fluid milk (Table 5). All adult families barely made the "high" category and all other family composition groups reported average usage. Analysis of data from the 1957 Urban Family Food Expenditure study revealed that families with children consumed 10 to 20 per cent more milk per person than all adult families[1]. The sample on which this finding was based was limited to two-to-six person families with incomes ranging from $2,500 to $7,000, in five cities. The difference in the sampling base which included additional cities, larger households and a wider income range, together with the lapse of six years, could account for the discrepancy between the two. However, it is very likely that small families (two to six persons) with young children still consume more fresh milk per person than all-adult families. Research carried out for the Department of National Health and Welfare has established that children consume considerably more milk per person on the average than adults[2].

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[1] Dairy Foods Service Bureau, op. cit., p. 69

[2] This possibility was tested by a scatter diagram which made it evident that there was little correlation between average family size by city and the consumption of fresh milk per person.

The "telephone" data reveal that families which include children under 9 as well as children between 10 and 19 years of age are very heavy users of powdered milk. These families had an average of 5.97 persons per family. If they followed Canada's Food Guide, their weekly milk bill would be quite substantial. Consequently, at least some of them seek to economize by substituting powdered for fresh milk in various uses.

Table 5.—Consumption of Milk per Person as Related to Family Composition, Telephone Data, 18 Cities, Canada, March 1963

Family composition class	Sample size	Consumption of milk per person			Proportion reporting milk	
		Fresh	Powdered	Total	Fresh	Powdered
					—per cent—	
Adults only	1,571	High	Very low	Average	89.6	10.0
Adults and children under 9	1,466	Average	Average	Average	94.3	21.1
Adults and children 10-19	639	Average	Low	Average	95.5	16.6
Adults and children in both age groups	919	Average	Very high	Average	93.1	30.4

Interrelationship in the Use of Fresh and Powdered Milk.—Non-users of fresh milk are more likely to use three or more glasses of powdered milk per person per day than those who use any fresh milk[3] (Table 6). Likewise non-users of powdered milk are somewhat more likely to use three or more glasses of fresh milk per day per person than relatively heavy users of powdered milk (Table 7). Nevertheless, many families who use three or more glasses of powdered milk per person a day also use a similar quantity of fresh milk. In fact, the main concentration of families who use small quantities of powdered milk was among those who use one or two glasses of fresh milk per person per day. Thus, families who drink a large quantity of milk provide the main market for powdered as well as fresh milk. A few of these families have switched to powdered milk only. Some others use both in substantial quantities.

The data obtained in the telephone survey did not state how milk was used in the household. Nevertheless, it is possible to draw some deductions on the manner of usage from the quantity used. Where milk is used as a beverage this quantity is likely to be much higher than where usages are limited to cooking and as a complement to such dishes as pudding, cereal and coffee. In the telephone survey 8.5 per cent of the families used one glass of milk or less per person per day. It is very likely that most, if not all, of these families did not use milk for beverage purposes. The Dairy Foods Service Bureau study gives an indication of the probability that this is a good estimate of the proportion of families who did not drink milk. Of the 5,861 families included in this study, 9.2 per cent of the families interviewed reported that

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[1] See Johnston, C.I., op. cit., p. 6.

[2] Survey of Fresh Milk Consumption Habits of Canadians, Data from Radiation Protection Programs, Radiation Protection Division, Department of National Health and Welfare, Ottawa, September 1963, pp. A-3 to A-10.

[3] Data were reported in quarts per day per family. The conversion to glasses per person is approximate.

Table 6.—Use of Powdered Milk as Related to Use of Fresh Milk, Telephone Data, 18 Cities, Canada, March, 1963

Quantity of reconstituted powdered milk per person	Quantity of fresh milk used in glasses per person per day[a]					
	0	One	Two	Three	More than three	All families
	—per cent—					
Glasses per day[a]						
0	60	53	80	88	91	81
One	4	28	7	4	2	6
Two	13	16	10	4	3	8
Three	13	2	2	3	2	3
More than three	10	1	1	1	2	2
Total	100	100	100	100	100	100
	—number—					
Families	338	331	1,407	1,427	1,092	4,595

[a] The data were reported in quarts per family per day. The conversion to glasses per day is a rough approximation.

Table 7.—Use of Fresh Milk as Related to Use of Powdered Milk, Telephone Data, 18 Cities, Canada, March, 1963

Quantity of fresh milk	Quantity of reconstituted powdered milk used in glasses per person per day[a]					
	0	One	Two	Three	More than three	All families
Glasses per person per day[a]	—per cent—					
0	5	5	13	29	38	7
One	5	33	16	4	6	7
Two	30	35	41	20	18	31
Three	33	19	19	34	14	31
More than three	27	8	11	13	24	24
Total	100	100	100	100	100	100
	—number—					
Families	3,744	282	340	142	87	4,595

[a] The data were reported in quarts per family per day. The conversion to glasses per person is a rough approximation.

they did not drink fresh milk. Thus, the assumption that the proportion of families who use less than one glass of milk per person per day is a fair approximation of the proportion of families that do not drink milk, appears sound. It follows that the proportion of families that use more than one glass of milk per person per day is a reasonable estimate of the proportion that drink milk.

On the basis of these assumptions, about 13 per cent of the families in the cities surveyed in the telephone study used powdered milk for drinking purposes (Sum of Groups I and II, Table 8)[1]. The proportion ranged from 26 per cent in Saskatoon to only 3 per cent in Hamilton.

Table 8.—Quantity of Powdered Milk Used per Day, by City, Telephone Data, Canada, March, 1963

City	Group I	Group II	Group III	Group IV
	Use more than one glass of powdered milk per person per day and do not use fresh milk[a]	Use more than one glass of powdered milk per person per day and also use fresh milk[a]	Use some powdered milk but less than one glass per person per day[a] [b]	Use no powdered milk
	—per cent—			
London	[c]	11	3	86
Windsor	2	3	1	94
Hamilton	1	2	1	96
Saskatoon	2	24	6	68
Ottawa-Hull	3	7	6	84
Edmonton	4	9	7	80
Toronto	4	4	2	90
Winnipeg	4	8	3	85
Regina	4	11	6	79
Halifax	2	14	9	75
Montreal-French	1	9	10	80
Montreal-English	1	7	2	90
Vancouver	3	17	13	67
Sydney	3	8	7	82
Calgary	2	11	9	78
Québec-Lévis	4	11	18	67
Saint John	1	6	5	88
Victoria	3	14	5	78
Three-Rivers	6	10	8	76
All Cities	3	10	6	81

[a] Data were reported in quarts per family per day and converted to glasses per person on an approximate basis.
[b] Some but not all households in this group also used fresh milk.
[c] Less than 0.5.

It is noteworthy that in all cities, except Toronto, most of the families who appear to use powdered milk for beverage purposes also use fresh milk. Such families may fall into three groups, namely:

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[1] This estimate is confirmed by the Dairy Foods Service Bureau study. In the latter, 14.7 per cent reported that they used powdered milk for drinking purposes. The smaller discrepancy may be due to the inclusion of smaller communities in the Dairy Foods Service Bureau study sampling base and the fact that a few families may use powdered milk for drinking purposes intermittently.

(1) Those who drink reconstituted powdered milk and use fresh milk for other purposes but not for drinking.

(2) Those who drink both reconstituted powdered milk and fresh milk but do not mix them.

(3) Those who mix reconstituted powdered milk with fresh milk for drinking purposes.

The author is convinced that the first two groups would be very small and that consequently, Group II of Table 8 provides a good indication of the proportion of families in the cities listed who mix reconstituted powdered milk with fresh milk for drinking purposes. This proportion would seem to exceed 10 per cent in London, Saskatoon, Regina, Halifax, Vancouver, Calgary, Quebec-Levis and Victoria. While these cities are scattered all across Canada, they include a larger proportion of Western than of other cities.

It is likely that most families who use some powdered milk but less than one glass per person per day (Group III, Table 8) use it primarily for cooking. However, some of them may be reconstituting it and using it mixed with fresh milk for beverage purposes. Nearly all families in this group used some fresh milk and about two-thirds of them used over a glass of fresh milk per person per day.

Nevertheless, the proportion of households using powdered milk for cooking purposes is likely to be considerably larger than the proportion using less than one glass of powdered milk per person per day. While those who drink milk normally do so every day, the use of milk for cooking purposes is likely to be more intermittent. Moreover, many families who use powdered milk for drinking purposes would also use it for cooking too. In the Dairy Food Services Bureau study 13.8 per cent of the interviewed families reported that they used powdered milk for cooking purposes.

A major household use of powdered skim milk is as a beverage. Over half of those who use it, use it for drinking purposes. About four-fifths of those who do use it for drinking purposes also use fresh fluid milk. It is also reasonable to assume that many of these families mix powdered and fresh milk.

PUBLICATION OF THE ECONOMICS BRANCH

Canada—Trade in Agricultural Products with the United Kingdom, the United States and All Countries, 1963 and 1964. Ottawa. June 1965. pp. ii+33.

The tenth in a series of annual bulletins published by the Economics Branch.

The 14 statistical tables, compiled by D. L. Bolton of the Marketing and Trade Services Division, contain historical summaries of agricultural trade, as well as figures for 1963 and 1964.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Trade and Development. Trade Expansion and Regional Groupings. Part I. New York. 1964. pp. viii+418. Price: $U.S. 8.00.

One in a series of eight volumes that supply details on the proceedings of the U.N. Conference on Trade and Development held in Geneva in the spring of 1964.

In the words of U Thant, Secretary-General of the U.N., in the foreword to this volume, this conference "ushered in a new chapter in the history of United Nations endeavours to accelerate the economic development of developing countries. The Conference has shown the way towards a more just and rational international economic order in which the poor nations, which make up the great majority of mankind, will at long last be able to have an adequate share in the fruits of economic and technological progress.

The Conference has taken the first steps towards the establishment of a new trade policy for development. It has, moreover, recognized that if the acceptance of broad principles and policies for the conduct of international trade is to have real meanings, those principles and policies must be translated into practical action through effective international machinery."

Canadian readers will be particularly interested in a memorandum, submitted by France, on certain items on the agenda of the conference (pages 18-27) and in papers on International Trade and its Significance for Economic Development, prepared in the Bureau of General Economic Research and Policies of the Department of Economic and Social Affairs (pages 67-112); Trade Problems between Countries having Different Economic and Social Systems, prepared by the Secretariat of the U.N. Economic Commission for Europe (pages 113-169); Past Trade Flows and Future Prospects for Trade between the Centrally-planned Economies and Developing Countries, prepared by the U.N. Economic Commission for Europe (pages 170-237); Implications for Trade and Development of Developing Countries of Economic Groupings of Developed Countries and for Preferential Trading Arrangements, prepared by the U.N. Economic Commission for Europe (pages 238-403); and The Work of the Economic Commission for Europe in the Sphere of Trade and Development.

Monthly Bulletin of Agricultural Economics and Statistics. Volume 14, Number 4, April 1965. FAO. Rome, Italy.

Has an article by A. S. M. Hall describing "A Comprehensive Marketing Board: Mauritius", its functions, constitution, administration, powers, financing, and policies.

The Statistical Tables have a Special Feature consisting of tables on FAO Index Numbers of Food Production—FAO Index Numbers of Food Production—FAO Index Numbers of Total Agricultural Production—FAO Index Numbers of Per Caput. Total Agricultural Production.

Volume 14, Number 5, May 1965.

K. C. Abercrombie opens this issue of the Bulletin with an article on "Subsistence Production and Economic Development" in which he draws attention to the "decline in the proportion of agricultural production used for subsistence" which "is generally characteristic of economic development, the measures to use "to develop production for the market", and the "improvement of subsistence production".

OTHER PUBLICATIONS

Economic Geography of Canada. Foundations, Growth, Trends. With an introduction to a 68-region system. Camu, P., E. P. Weeks and Z. W. Samets. Macmillan of Canada. Toronto. 1964. pp. xvi + 393. Price: $12.50.

Canadians now have their "Economic Geography" and it is a solid type of geography that skillfully combines compactness and comprehensiveness.

One cannot but regret that space limitations forbid the type of detailed and critically constructive review which this book so richly deserves. Still, the book is so well organized that a mere listing of its various parts and their contents may suffice to whet the appetite of prospective readers. Here is the sequence: Introduction: The Individual and his Environment; Part I: The Natural and Historical Setting, (1) The Natural Environment, (2) The Progressive Integration of Man with the Environment; Part II: The General Economic Geography, (3) The People, (4) Instrumental Capital and Productivity, (5) Energy: a Basic Input, (6) Primary Resource Industries, (7) Secondary Industries: Manufacturing and Construction, (8) Tertiary Activities: Trade and Services, (9) Transportation: The Basic Link; Part III: A System for Canadian Regional Analysis, (10) The Development of a 68-Region System.

One of the authors is a geographer and the other two are economists. Pierre Camu, the geographer, is president of the St. Lawrence Seaway Authority; E. P. Weeks, a 1933 Rhodes Scholar, is Executive Director of the Atlantic Development Board; and Z. W. Sametz is Director of the Economic and Social Research Division of the Canada Department of Citizenship and Immigration.

An Economic Study of Pig Production in South West England, 1963-64. Burnside, Estelle and R. C. Rickard. Department of Agricultural Economics, University of Exeter, Newton Abbot, Devon, England. Report No. 152. March 1965. pp. 29. Price: 2/6.

A report on a 1963-64 investigation and a comparison of results for that year with results for the 1953-54 to 1956-57 and the 1959-60 to 1963-64 periods.

The Profitability of a Thirty Sow Herd in Nova Scotia. Farm Management Division, Livestock Services Branch, Department of Agriculture and Marketing, Truro, Nova Scotia. June 1965. pp. 7.

A "presentation of production factors, costs, and returns of a typical thirty-sow herd which might be found on a Nova Scotia farm. The information presented is based on research findings, and experimental data wherever possible.

Research on Agricultural Development in Southeast Asia. Wharton, Clifton R., Jr. The Agricultural Development Council, Inc., 630 Fifth Avenue, New York, N.Y. 10020. 1965. pp. 62.

Dr. Wharton has had a long and rich experience in teaching and research work in economic development in the United States, South America and Southeast Asia and is now the Director of the American Universities Research Program of the Agricultural Development Council. He is highly qualified to discuss, as he does in this monograph, the research work in agricultural economics carried on in Southeast Asia, the deficiencies in current research, and the problems likely to be encountered in future research work in agricultural development in this part of the world. His monograph should be particularly useful to Western agricultural economists doing or planning to do research work in developing areas.

The Relative Importance of Certain Factors in Profitable Milk Production. Benyon, V. H. and J. A. Langley. Department of Agricultural Economics, University of Exeter, Newton Abbot, Devon, England. Report No. 154. June 1965. pp. 29. Price: 3/6.

The two researchers use gross margin per forage acre as their measure of profitability, gross margin being the value of production less costs of variable inputs and representing "the return to the farmer for his skill in husbandry without the complication of overheads".

They find that the level of gross output is the major determinant of gross margins and that the output of milk per forage acre is also closely associated with gross margin. The number of cows kept on a given acreage accounts for the largest percentage of variation in milk output per acre, and is followed by milk yield per cow; milk prices appear to be the least important determinants of variation.

Concentrate costs are the main factor explaining variations in total variable costs, and fertilizers account for little of this variation.

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